AMBERPOINT

Real World ESM
US Army Leadership Forum

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Vice President, US Federal
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The One Objective for this Presentation

- Provide you with a few Tips, based upon Real World Experience, that will help you to be successful with Net Centric Computing (SOA)

Topics

- Brief background on AmberPoint
- ESM – What it is, What it should be
-

- Q&A

AmberPoint – (very) Brief Background

- Market Leader, Enterprise Service Management – ESM (aka Runtime Governance or SOA Management) COTS products
- ESM product of choice:
  - DISA NCES Program
  - NGA GeoScout Program
  - Multiple initiatives and programs within the Intelligence Communities
- Investors include Motorola and SAP
- Resold or OEMed by Microsoft, BEA, Tibco, IBM, Software AG, Iona, iWay, others

Starting Point for Discussion

U.S.ARMY

- SOA – High Complexity, Many Moving Parts
- One Common (and correct) Response has been to Standardize SOA Infrastructure via a Framework
- Some organizations who have taken this approach include

Telefonica

MOTOROLA

LEHMAN BROTHERS

KAISER PERMANENTE.

Allianz

Level(3)℠ COMMUNICATIONS

citigroup

france telecom

CareFirst BlueCross BlueShield

And…

Also Developing Frameworks

U.S.ARMY

DEFENSE INFORMATION SYSTEMS AGENCY

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

UNITED STATES INTELLIGENCE COMMUNITY

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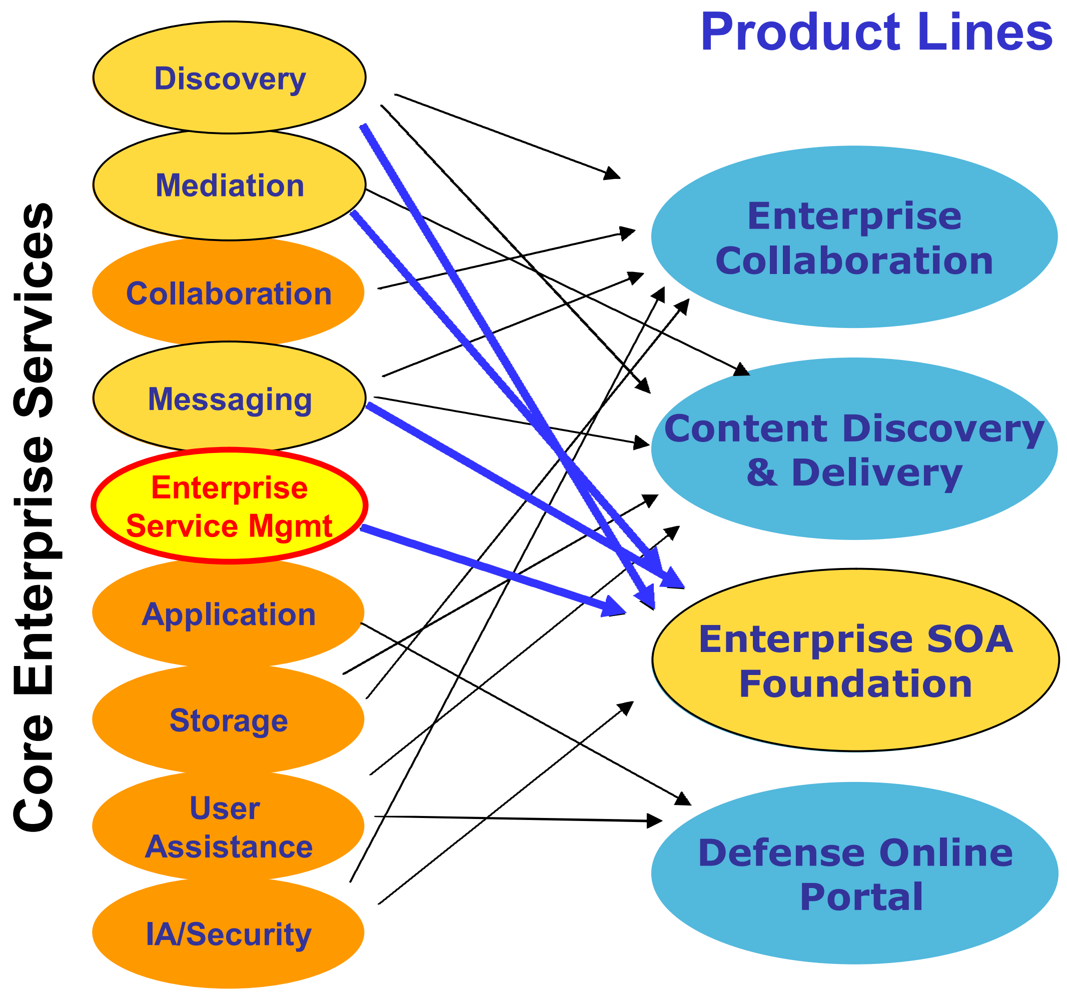
NCES Defines Core Enterprise Services



- NCES defines nine core enterprise services grouped into four product lines
- NCES is a set of standards and specifications enabling data producers and users to share information at the right place and right time
- NCES uses centrally managed collaborative governance to provide the services to the DoD
- SOA Foundation + Security is DISA's "Framework"

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Enterprise Service Management - From DISA Website (Summary)

Description

- Enterprise Service Management (ESM) is a continuous process of managing, measuring, reporting, and improving the quality of service (QoS) of systems and applications.
- "…the component that provides Web service management."
- "…integrate with several other service management offerings to provide extensive situational awareness."

Capabilities

- Monitor and measure
- Report and visualize … performance metrics
- Monitor and enforce service level agreement (SLA) compliance
- Manage Web service lifecycle
- Log and audit Web service activities
- Anticipate Web service problems and send alert notifications
- Pinpoint the root cause of Web service problems

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Most People perceive ESM to be…

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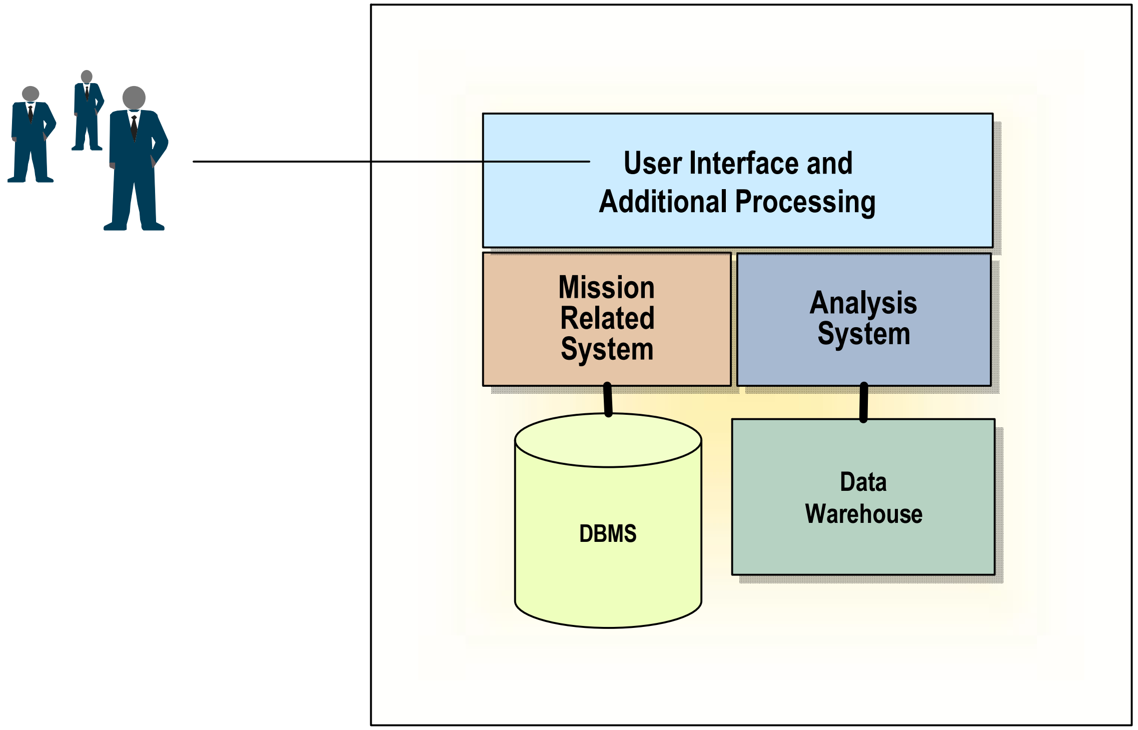
Monitor, Measure, Report, Alert =
Traditional Management, Passive Activities

Tip #1

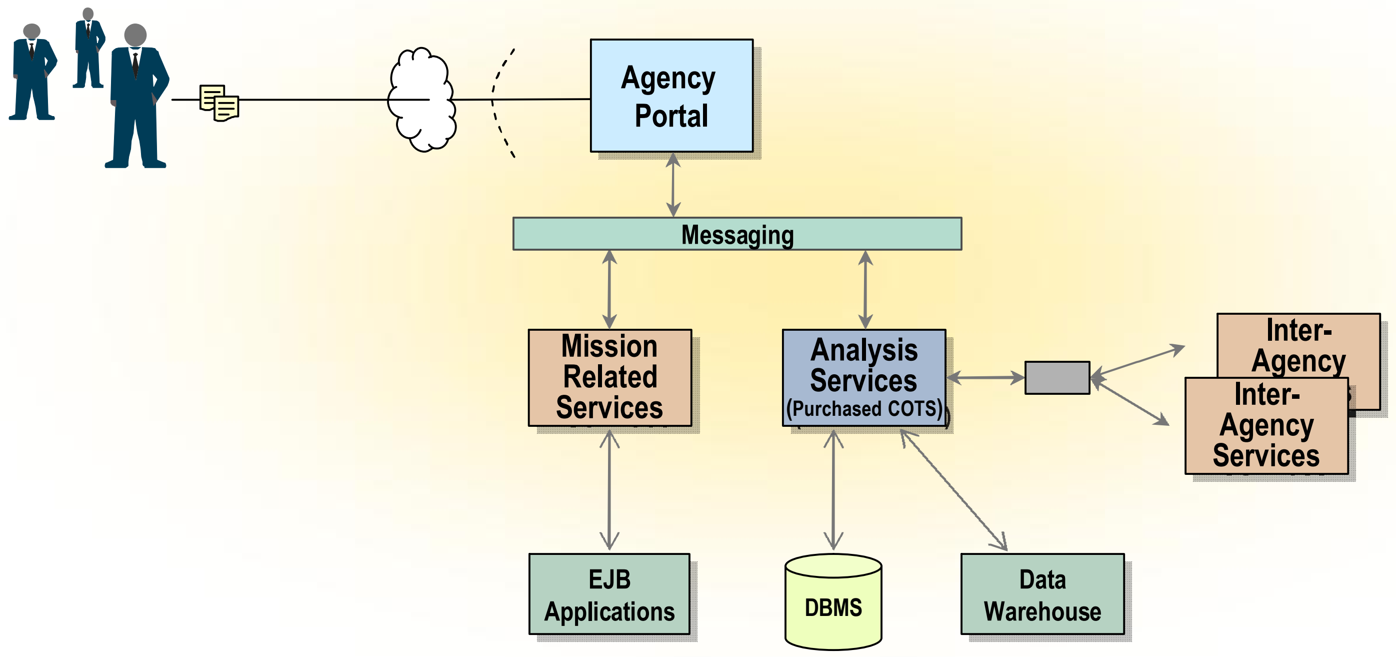
- If you use Traditional Management Tools and Techniques alone, you will fail

Tightly Coupled Architecture



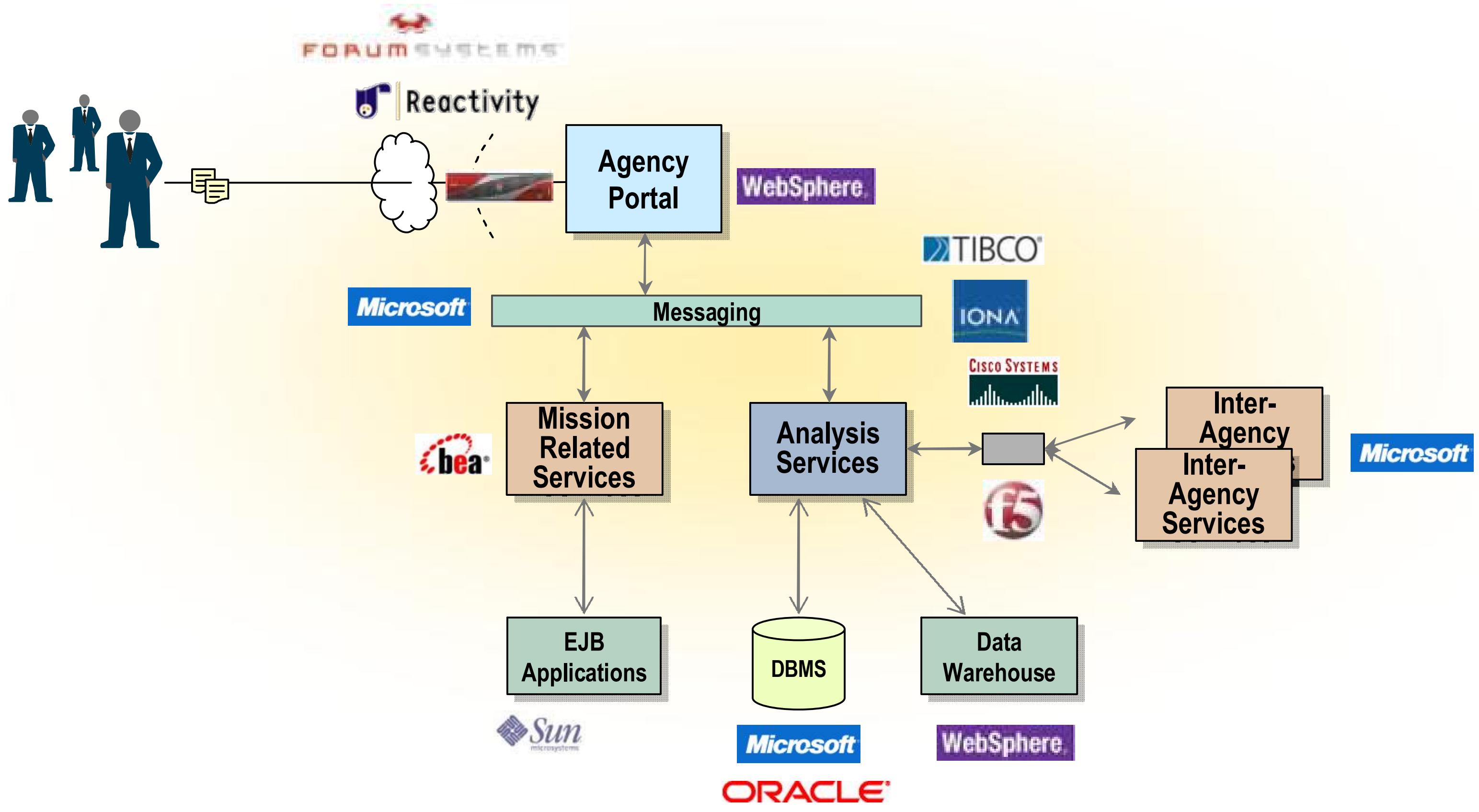
Issues occur within System Often on a single Computer
System, Network, Database Up/Down?

• Loosely Coupled (Net Centric) Architecture



Issues occur within <u>and between</u> Systems

Net Centric Complexity



Issues occur within and between Systems
Over Heterogeneous Technologies

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New Types of Problems

- Everything Seems to be Up & Running (Green Lights), but the users are calling the Help Desk claiming that they aren't getting service
- Non-Responses and Corr
- Debugging Distri
- Success
  (Archi
- S   ial Security
-   are Shared across dozens

Application Issues, not Operations Issues

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Tip #1

- If you use Traditional Management Tools and Techniques alone, you will fail because Traditional Management is an Operations Problem and SOA Management is an Application Problem
- As a Result, the SOA Management System will be Monitored by your Operations Staff but Used by your Development and Tier II/Tier III Staffs to solve problems that they would otherwise have to write complex code to fix.

● Traditional Management vs. SOA Management

Traditional Management	SOA Management
◆ Focused on Hardware, Network, Underlying Infrastructure	◆ Focused on the Messages as they Flow between Components
◆ Passive	◆ Active
◆ Quantitative	◆ Qualitative

- The Whole Objective of a SOA System is to deliver the right messages to the right people at the right time
- From the User's perspective, <u>the Message IS the Application</u>
- Thus, to effectively manage a SOA-based System, you have to Mine Information Out of the Messages and use that Information to Improve the overall Quality of the User's Experience

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Mine Information Out of the Messages?

```
<USER_INFO>
        <ORGANIZATION>AMC</ORGANIZATION>
        <RANK>Major</RANK>
        <FIRST_NAME>Warren</FIRST_NAME>
        <LAST_NAME>Jones</LAST_NAME>
</USER_INFO>
<REQUIREMENT>
        <STATUS>1</STATUS>
        <SYSTEM>Logistics</SYSTEM>
</REQUIREMENT>
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<USER_INFO>

        <ORGANIZATION>101st Airborne Div
            </ORGANIZATION>
        <RANK>SGT</RANK>
        <FIRST_NAME>Tom</FIRST_NAME>
        <LAST_NAME>Anderson</LAST_NAME>
</USER_INFO>
<REQUIREMENT>
        <STATUS>4</STATUS>
        <SYSTEM>Blue Force Tracking</SYSTEM>
</REQUIREMENT>
```
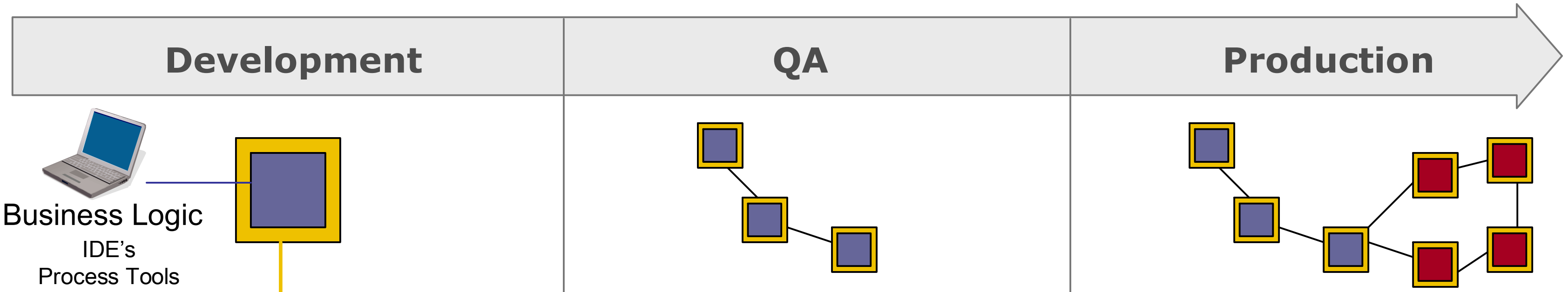
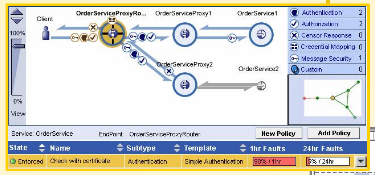
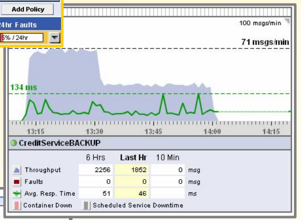

ESM Isn't just for Production

ESM simplifies real-time visibility and control
at Each Stage of the SOA Lifecycle

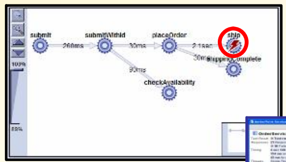
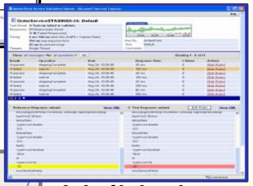
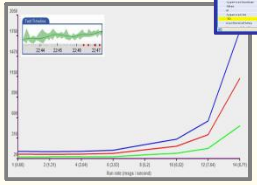


Runtime Policies
- Performance
- Security
- Availability
- Logging

Performance

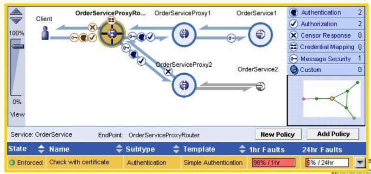
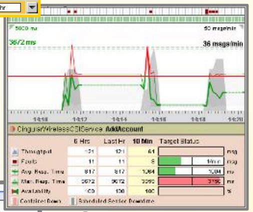
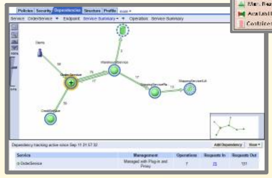
Discovery
- Automatically enforce governance

Diagnostics

Validation

Capacity Planning

More Policies
- Performance
- Security
- Availability
- Logging
- SLAs
- Audit

Service Levels

Discovery
- Automatically discover rogue services

Manages the health and well being of SOA systems while they are running

Enterprise Service Management - From DISA Website (Summary)

- **Description**
  - Enterprise Service Management (ESM) is a continuous process of managing, measuring, reporting, and improving the quality of service (QoS) of systems and applications.
  - "…the component that provides Web service and underlying component management."
  - "…integrate with several other service management offerings to provide extensive situational awareness."
- **Capabilities**
  - Monitor and measure
  - Report and visualize … architecture and mission metrics
  - Monitor and enforce service level agreement (SLA) compliance
  - Manage Web service lifecycle
  - Log and audit Web service activities
  - Anticipate Web service problems and send alert notifications
  - Pinpoint the root cause of Web service and system flow problems

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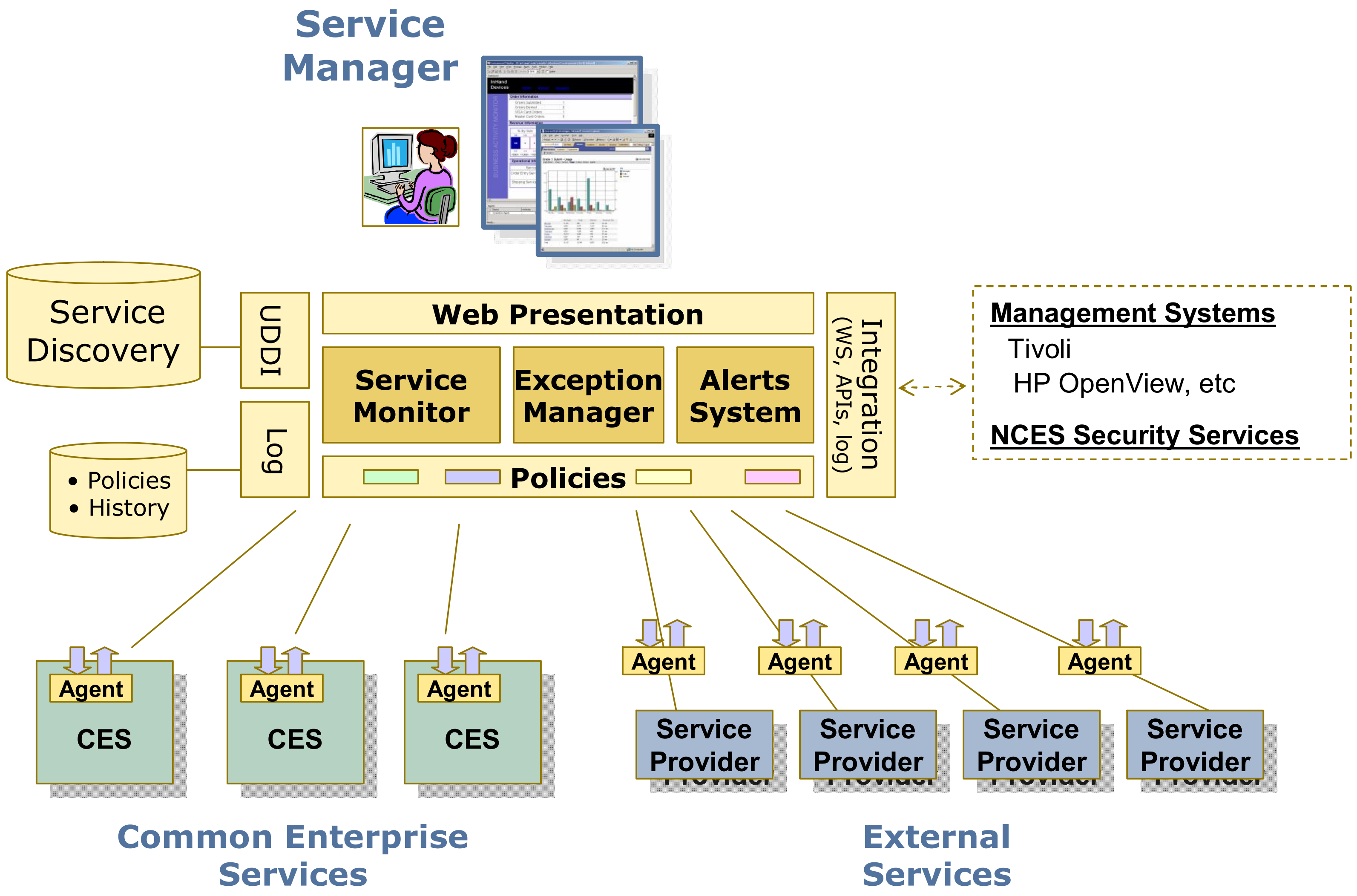
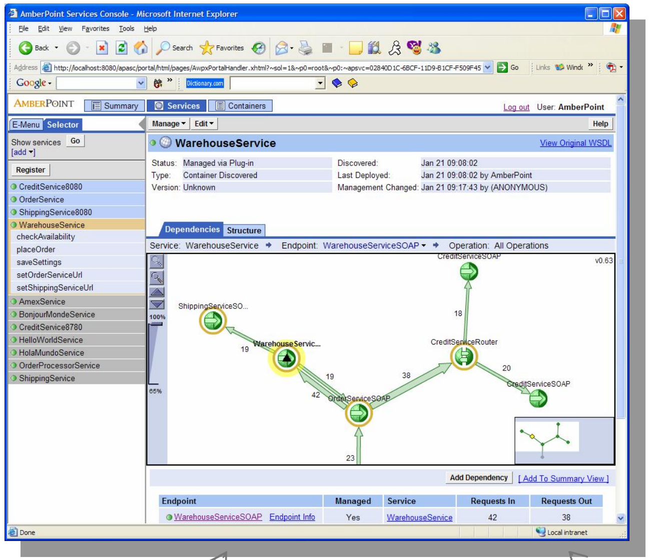
Application Level Problems Solved by ESM

- Two Types
  - What’s Going On?
  - Proactively Fix It
- “What’s Going On” Types of Problems
  - Runtime Discovery
    - Synchronized with Static Service Registry
  - Visualization
  - Quantitative and Qualitative Data Collection (User, Mission-specific Info, etc.)
  - Root Cause Analysis and Distributed System Debugging
  - Validation – Simulating Multiple Applications accessing Shared Components in QA/Test
- “Proactively Fix It” Types of Problems
  - Endpoint Security and Situational Access
  - Prioritization
  - Scalability – Dynamic Expansion or Throttling

DISA ESM Services Model



Runtime Discovery and Visualization



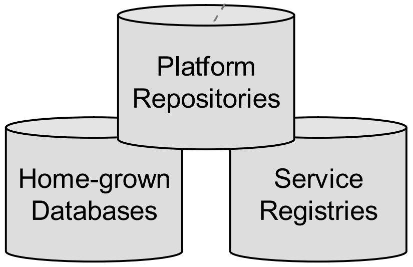
CreditService8080
OrderService
ShippingService8080
WarehouseService
checkAvailability
placeOrder
saveSettings
setOrderServiceUrl
setShippingServiceUrl
AmexService
BonjourMondeService
CreditService8780
HelloWorldService
HolaMundoService
OrderProcessorService
ShippingService

WarehouseService

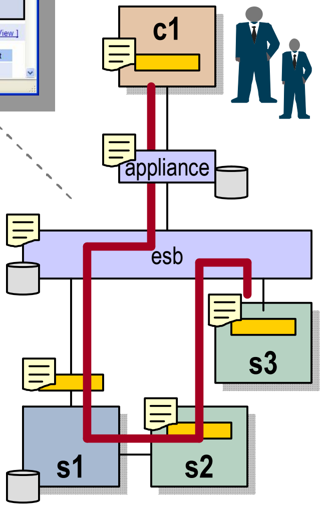
Status:	Managed via Plug-in	Discovered:	Jan 21 09:08:02
Type:	Container Discovered	Last Deployed:	Jan 21 09:08:02 by AmberPoint
Version:	Unknown	Management Changed:	Jan 21 09:17:43 by (ANONYMOUS)

Service: WarehouseService → Endpoint: WarehouseServiceSOAP → Operation: All Operations

Endpoint	Managed	Service	Requests In	Requests Out
WarehouseServiceSOAP Endpoint Info	Yes	WarehouseService	42	38



Intended Design

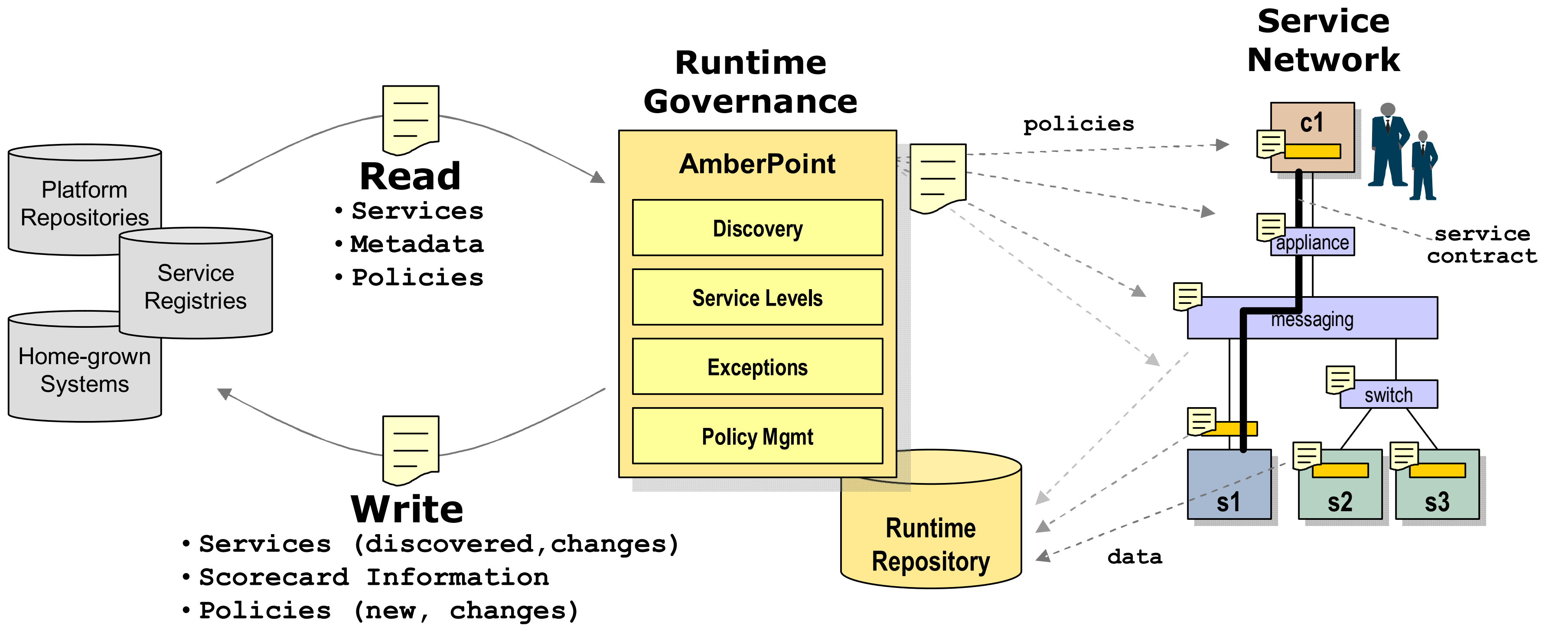


Running Reality

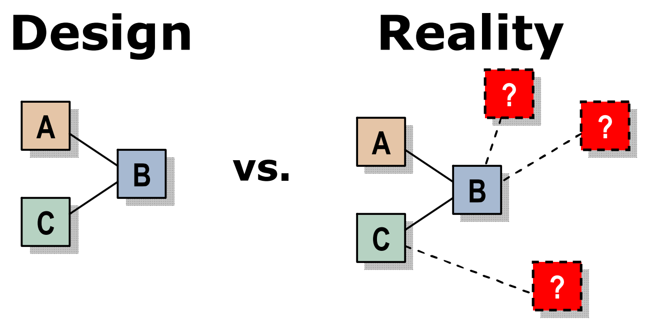
- Dynamic discovery of services and supporting components “in the wild”
  - Web Services
  - Databases
  - JAX-RPC and JMS messaging
  - EJBs
  - ESBs
- Automatically tracks transactions
  - Non-invasive; no message modifications
  - Feeds impact analysis, error detection, etc.
- In most environments, no single source of information is always right

Ensures a complete view of the SOA environment

Automatic Synchronization with Design-time Governance



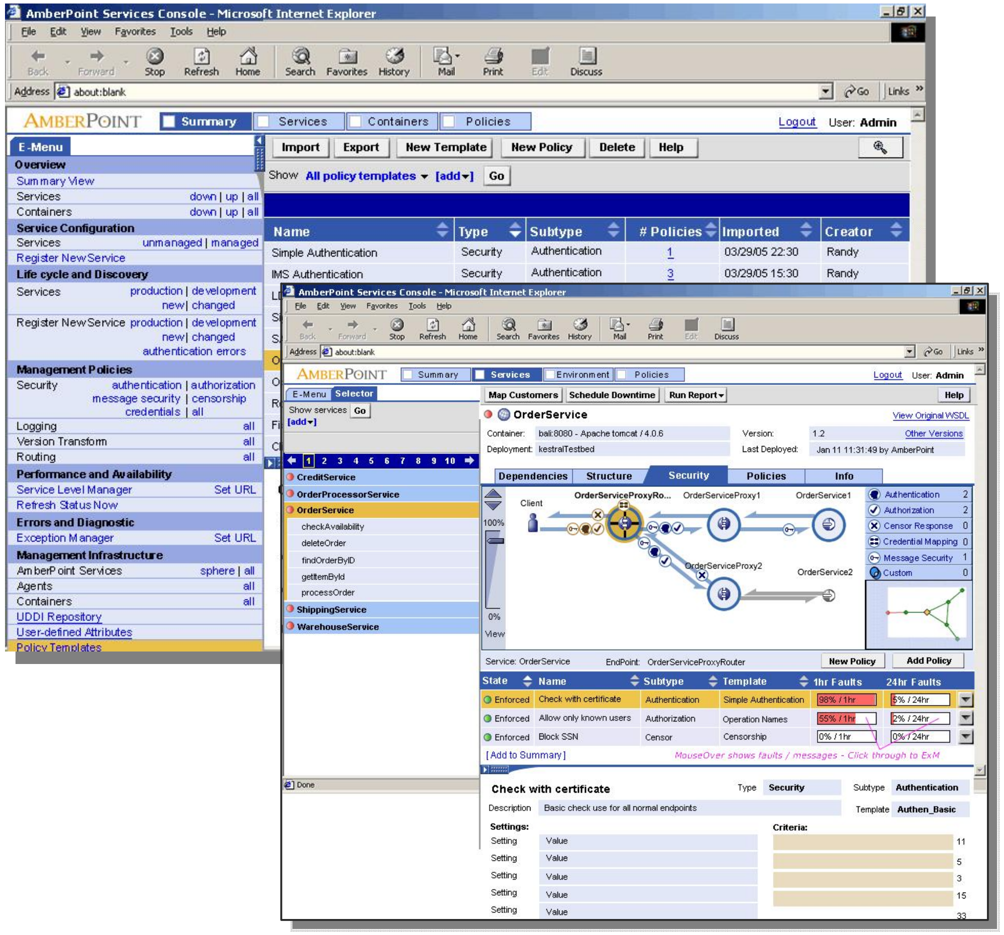
- Publishes
  - Changes to endpoints and policies
  - Scorecard metrics
  - Dependencies
- Discovers discrepancy between intentions (design/dev) and reality (runtime)



Supports federated information exchange

Customizable Policy Library

- Pre-built library of most commonly used runtime policies
  - Instrumentation
  - Content-based Policies
  - Versioning
  - Authentication – certificates, credentials, SAML, etc
  - Authorization
  - Censorship
  - Credential Mapping
  - Crypto – Signatures & Encryption
  - Throttling
  - Quality of Service
    - Performance
    - Availability
    - Throughput
  - Service Level Agreements
  - Exception Handling
  - Validation
  - Message Control
- User-extensible
  - Enterprise-wide compliance
  - Application- and Industry-specific policies


AmberPoint Services Console - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address about:blank
Go Links
AMBERPOINT
Summary Services Containers Policies
Logout User: Admin
Import Export New Template New Policy Delete Help
Show All policy templates [add] Go
E-Menu
Overview
Summary View
Services down | up | all
Containers down | up | all
Service Configuration
Services unmanaged | managed
Register New Service
Life cycle and Discovery
Services production | development new | changed
Register New Service production | development new | changed authentication errors
Management Policies
Security authentication | authorization message security | censorship credentials | all
Logging all
Version Transform all
Routing all
Performance and Availability
Service Level Manager Set URL
Refresh Status Now
Errors and Diagnostic
Exception Manager Set URL
Management Infrastructure
AmberPoint Services sphere | all
Agents all
Containers all
UDDI Repository
User-defined Attributes
Policy Templates
AmberPoint Services Console - Microsoft Internet Explorer
Summary Services Environment Policies
Logout User: Admin
E-Menu Selector
Show services Go [add]
Map Customers Schedule Downtime Run Report Help
1 2 3 4 5 6 7 8 9 10
CreditService
OrderProcessorService
OrderService
checkAvailability
deleteOrder
findOrderByID
getItemById
processOrder
ShippingService
WarehouseService
View Original WSDL
Other Versions
Dependencies Structure Security Policies Info
Client
OrderServiceProxyRo...
OrderServiceProxy1
OrderService1
OrderServiceProxy2
OrderService2
100%
0%
View
Authentication 2
Authorization 2
Censor Response 0
Credential Mapping 0
Message Security 1
Custom 0
New Policy Add Policy
[Add to Summary]
MouseOver shows faults / messages - Click through to ExM
Done

Name	Type	Subtype	# Policies	Imported	Creator
Simple Authentication	Security	Authentication	1	03/29/05 22:30	Randy
IMS Authentication	Security	Authentication	3	03/29/05 15:30	Randy

OrderService

Container: bali:8080 - Apache tomcat / 4.0.6
Version: 1.2
Deployment: kestralTestbed
Last Deployed: Jan 11 11:31:49 by AmberPoint

Service: OrderService EndPoint: OrderServiceProxyRouter

State	Name	Subtype	Template	1hr Faults	24hr Faults
Enforced	Check with certificate	Authentication	Simple Authentication	98% / 1hr	5% / 24hr
Enforced	Allow only known users	Authorization	Operation Names	55% / 1hr	2% / 24hr
Enforced	Block SSN	Censor	Censorship	0% / 1hr	0% / 24hr

Check with certificate
Type: Security
Subtype: Authentication
Description: Basic check use for all normal endpoints
Template: Authen_Basic

Settings:

Setting	Value
Setting	Value
Setting	Value
Setting	Value
Setting	Value

Criteria: 11, 5, 3, 15, 33

- Better control by eliminating “random” policy definitions
- Better reliability by using only pre-tested policies
- Reduces cost by minimizing time and skills to define new policies

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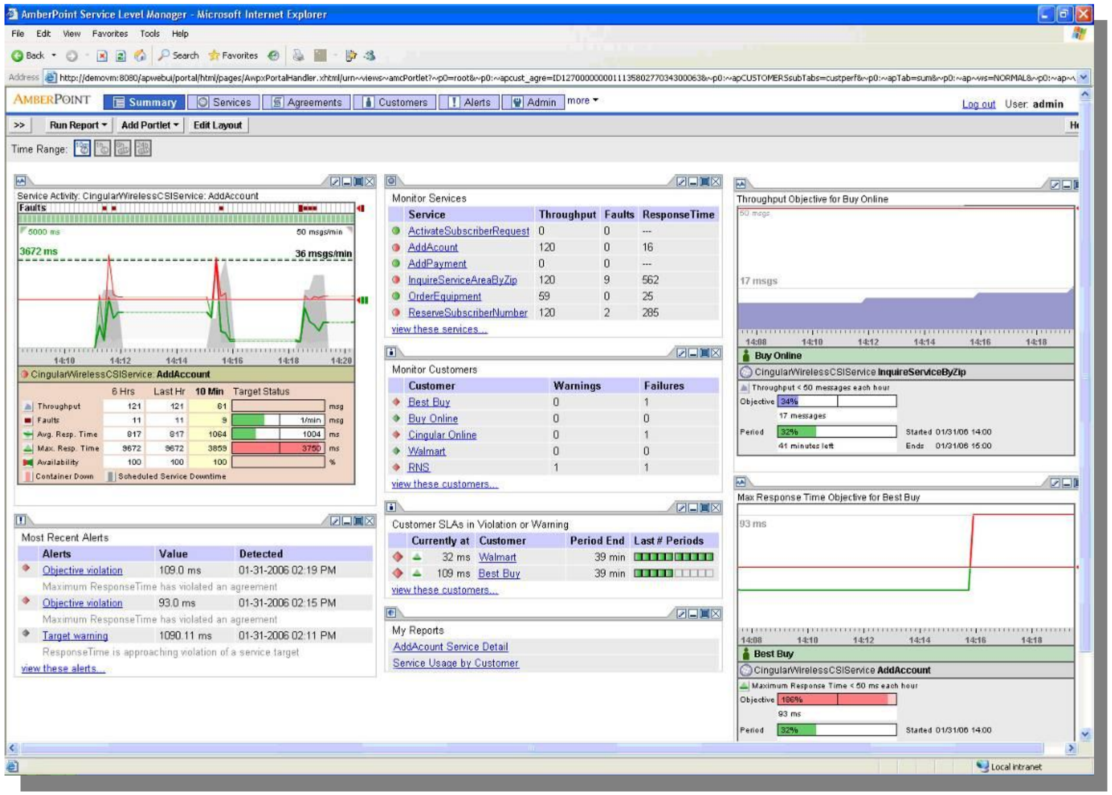
Service Level Management

Service- and Business-level Visibility

Service View

Alerts


AmberPoint Service Level Manager - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
AMBERPOINT
Summary Services Agreements Customers Alerts Admin more
Log out User: admin
>> Run Report Add Portlet Edit Layout
Time Range:
Local intranet

Service Activity: CingularWirelessCSIService: AddAccount

CingularWirelessCSIService: **AddAccount**

	6 Hrs	Last Hr	10 Min	Target Status	
Throughput	121	121	61		msg
Faults	11	11	9	1/min	msg
Avg. Resp. Time	817	817	1064	1004	ms
Max. Resp. Time	9672	9672	3859	3750	ms
Availability	100	100	100		%

Container Down | Scheduled Service Downtime

Most Recent Alerts

	Alerts	Value	Detected
◆	Objective violation	109.0 ms	01-31-2006 02:19 PM
	Maximum ResponseTime has violated an agreement		
◆	Objective violation	93.0 ms	01-31-2006 02:15 PM
	Maximum ResponseTime has violated an agreement		
◆	Target warning	1090.11 ms	01-31-2006 02:11 PM
	ResponseTime is approaching violation of a service target		

view these alerts...

Monitor Services

	Service	Throughput	Faults	ResponseTime
🟢	ActivateSubscriberRequest	0	0	---
🔴	AddAcount	120	0	16
🟢	AddPayment	0	0	---
🔴	InquireServiceAreaByZip	120	9	562
🟢	OrderEquipment	59	0	25
🔴	ReserveSubscriberNumber	120	2	285

view these services...

Monitor Customers

	Customer	Warnings	Failures
◆	Best Buy	0	1
◆	Buy Online	0	0
◆	Cingular Online	0	1
◆	Walmart	0	0
◆	RNS	1	1

view these customers...

Customer SLAs in Violation or Warning

	Currently at	Customer	Period End	Last # Periods
◆	32 ms	Walmart	39 min	
◆	109 ms	Best Buy	39 min	

view these customers...

My Reports

AddAcount Service Detail

Service Usage by Customer

Throughput Objective for Buy Online

Buy Online

CingularWirelessCSIService **InquireServiceByZip**

Throughput < 50 messages each hour

Objective 34% — 17 messages

Period 32% — 41 minutes left — Started 01/31/06 14:00 — Ends 01/31/06 15:00

Max Response Time Objective for Best Buy

Best Buy

CingularWirelessCSIService **AddAccount**

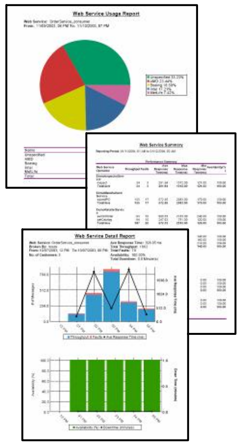
Maximum Response Time < 50 ms each hour

Objective 186% — 93 ms

Period 32% — Started 01/31/06 14:00

User Summary and Objectives

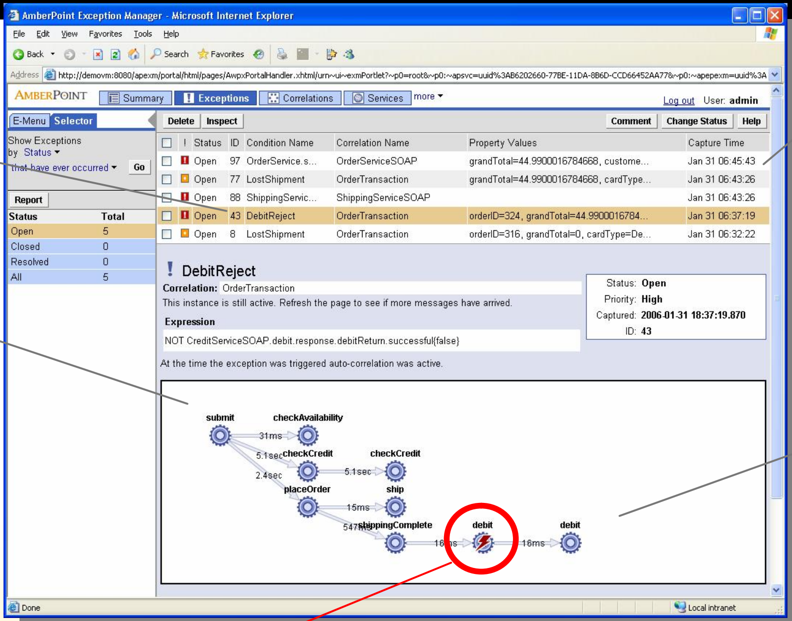
Historical Reporting



- Enforces agreements based on business criteria
  - "Gold" users, Accounting systems at the end of quarter, etc.
  - Multiple objectives per agreement, flexible calendars, scheduled downtimes, fixed and sliding time windows
- Granular visibility – groups, users, services, operations
- Preventative and corrective actions

Exception Management
Automatic transaction tracking and diagnosis

"Mission Specific" Exceptions


AmberPoint Exception Manager - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://demovm:8080/apexm/portal/html/pages/AwpxPortalHandler.xhtml/urn~ui~exmPortlet?~p0=root&~p0:~apsvc=uuid%3AB6202660-77BE-11DA-8B6D-CCD66452AA77&~p0:~apepexm=uuid%3A
AMBERPOINT Summary Exceptions Correlations Services more
Log out User: admin
E-Menu Selector
Show Exceptions by Status that have ever occurred Go
Delete Inspect Comment Change Status Help
Report

Status	Total
Open	5
Closed	0
Resolved	0
All	5

!	Status	ID	Condition Name	Correlation Name	Property Values	Capture Time
🟥	Open	97	OrderService.s...	OrderServiceSOAP	grandTotal=44.9900016784668, custome...	Jan 31 06:45:43
🟧	Open	77	LostShipment	OrderTransaction	grandTotal=44.9900016784668, cardType...	Jan 31 06:43:26
🟥	Open	88	ShippingServic...	ShippingServiceSOAP		Jan 31 06:43:26
🟥	Open	43	DebitReject	OrderTransaction	orderID=324, grandTotal=44.9900016784...	Jan 31 06:37:19
🟧	Open	8	LostShipment	OrderTransaction	orderID=316, grandTotal=0, cardType=De...	Jan 31 06:32:22

! DebitReject

Correlation: OrderTransaction

This instance is still active. Refresh the page to see if more messages have arrived.

Expression

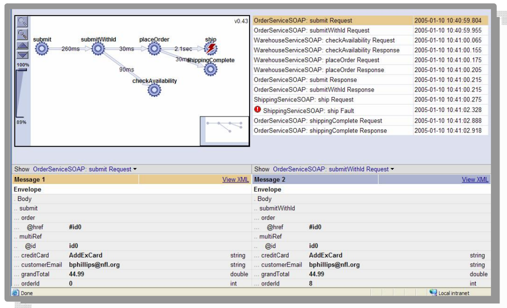
NOT CreditServiceSOAP.debit.response.debitReturn.successful(false)

Status: **Open**
Priority: **High**
Captured: **2006-01-31 18:37:19.870**
ID: **43**

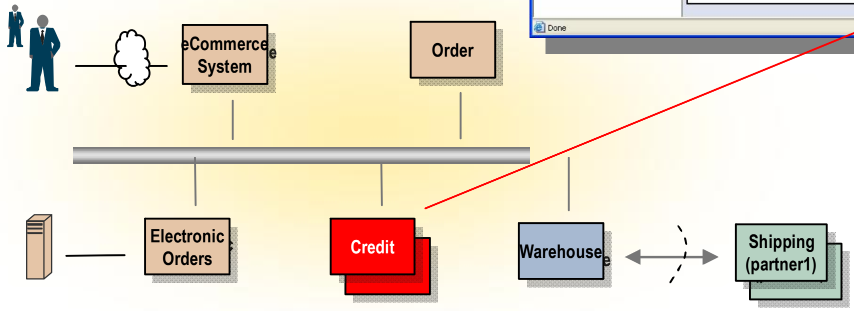
At the time the exception was triggered auto-correlation was active.

Technical Faults

Drill into Exception Content & Context



Process Flow
- Exception context
- Response times

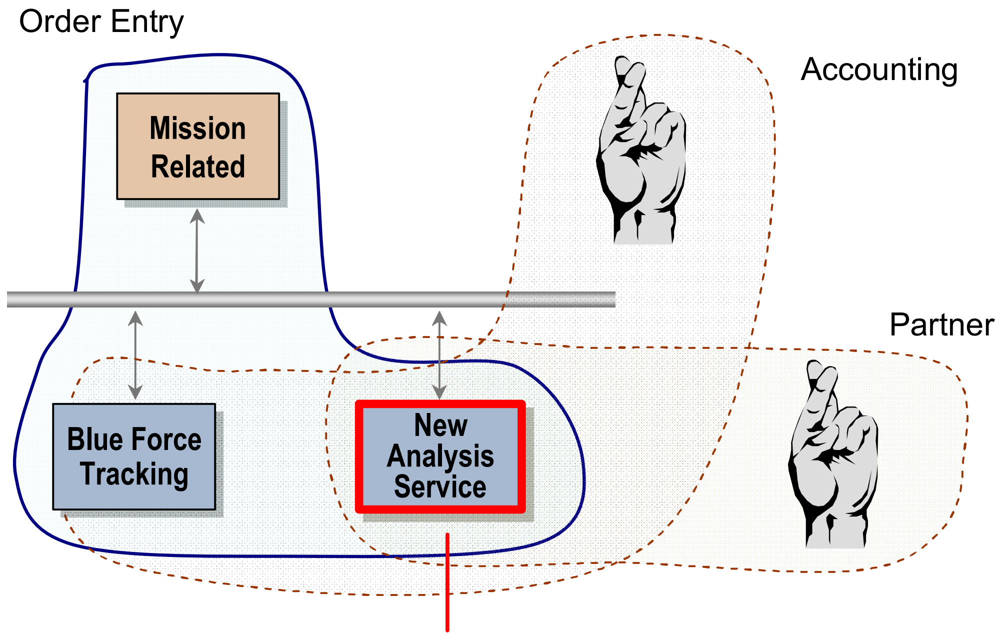


Augments System-level View

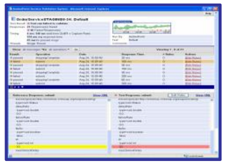
System Mgmt ✗
- ● Machines
- ● App Servers
- ● Network

- "Business" (Mission-Specific) visibility using exception content and context
  - Unique, Mission Specific-processing failures
  - Alert when "no order confirmation within 3 minutes after completion"
- Visibility in operational issues – services, transactions, operations, messages
  - SOAP faults, database errors, etc.

SOA Validation
Safe environment to validate changes before deployment

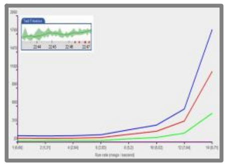


Validation



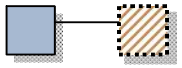
- Functionality
- Policy Changes

Capacity Planning



- Baseline Performance
- Capacity Changes

Simulation



- Simulate supporting services

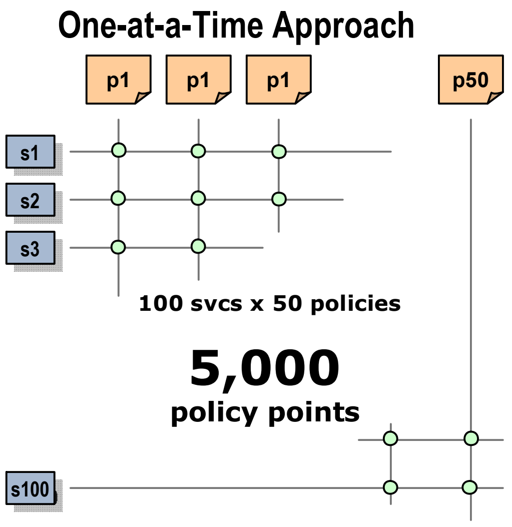
Functionality	*Will changes break dependent systems?*
Performance	*Acceptable performance and throughput?*
"What If" for Policy Changes	*Will new policy (security, routing, etc.) break dependent applications?*
"What If" for Capacity Changes	*What will happen if usage doubles? Triples?*

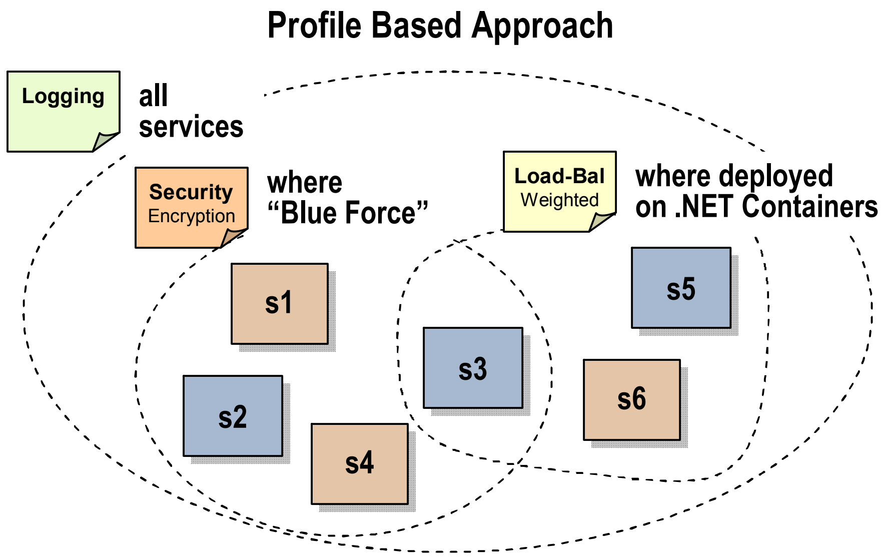
Application Level Problems Solved by ESM

- Two Types
  - What's Going On?
  - Proactively Fix It
- "What's Going On" Types of Problems
  - Runtime Discovery
    - Synchronized with Static Service Registry
  - Visualization
  - Quantitative and Qualitative Data Collection (User, Mission-specific Info, etc.)
  - Root Cause Analysis and Distributed System Debugging
  - Validation – Simulating Multiple Applications accessing Shared Components in QA/Test
- "Proactively Fix It" Types of Problems
  - Endpoint Security and Situational Access
  - Prioritization
  - Scalability – Dynamic Expansion or Throttling

Policies Replace Coding

- Based upon WS-Policy, a Standard Way to Deploy Instructions for Services
- Automatically applies policies based on dynamic attributes and message content.
  - All production services
  - All services in Accounting application
  - All services deployed in .NET containers
- User-defined attributes for services, containers & policies
- Assignments are reevaluated as attributes change



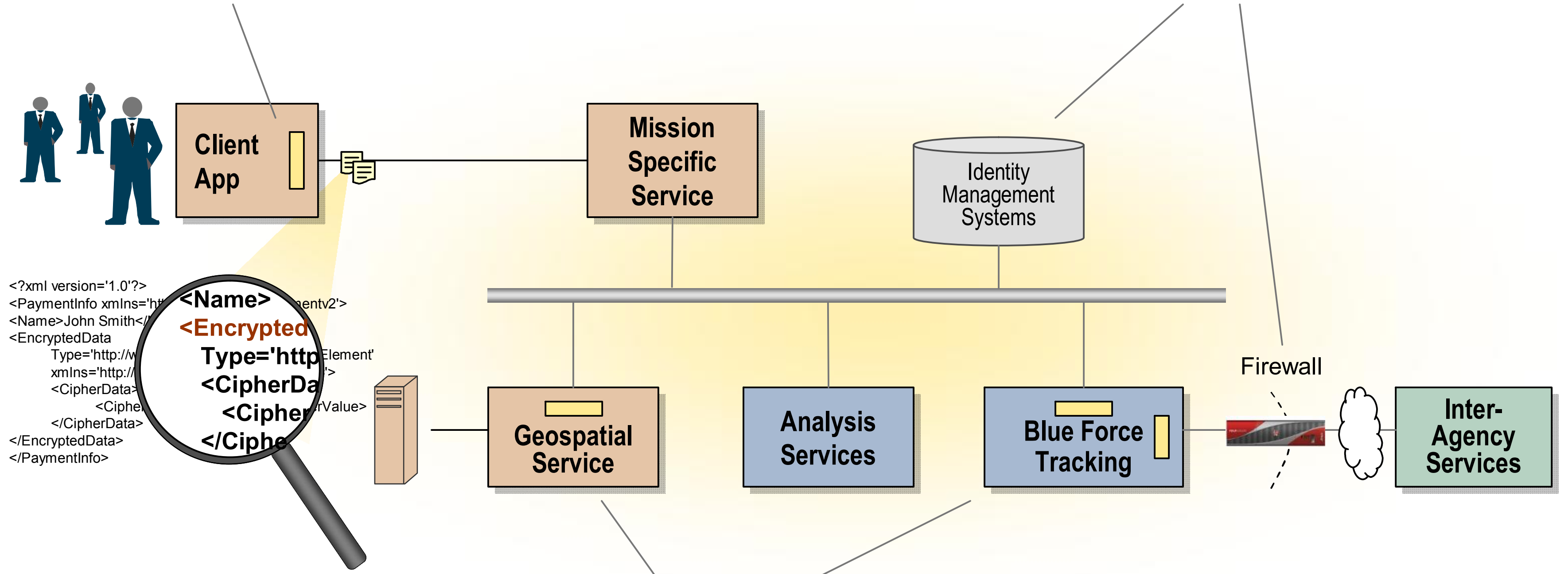


- Can manage system on "autopilot" where policies are automatically assigned as appropriate.
- Eliminates production mistakes by reducing manual steps.

Security
First and Last Mile Enforcement

First Mile Security
- Client-side agent
- Automatic enforcement of out-bound security

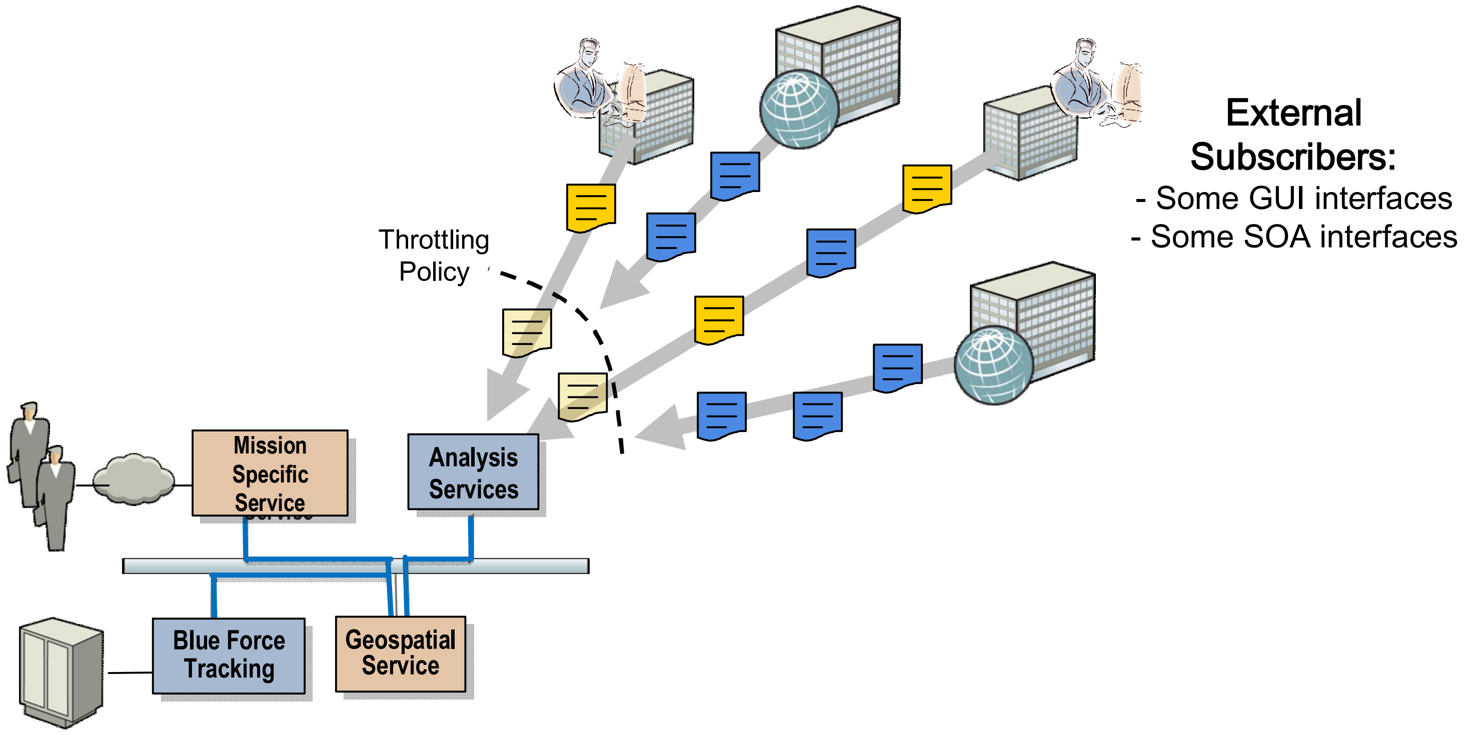
Extensive Integration
- Identity Management Systems
- Security Appliances
- App Server / ESB / OS Security



Last Mile Security
- Plug-ins provide endpoint protection
- No ability to circumvent

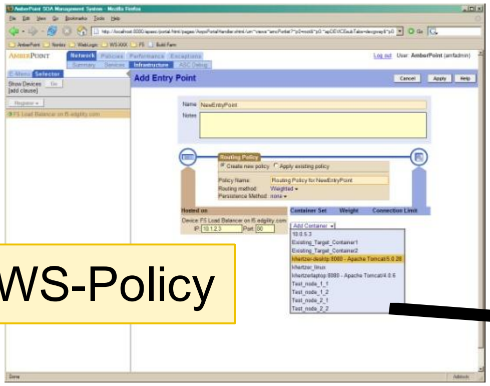
Policy Library
- Authentication
- Authorization
- Credential Mapping
- Censorship
- Crypto

Automatic Throttling
Protects against uncontrolled demand

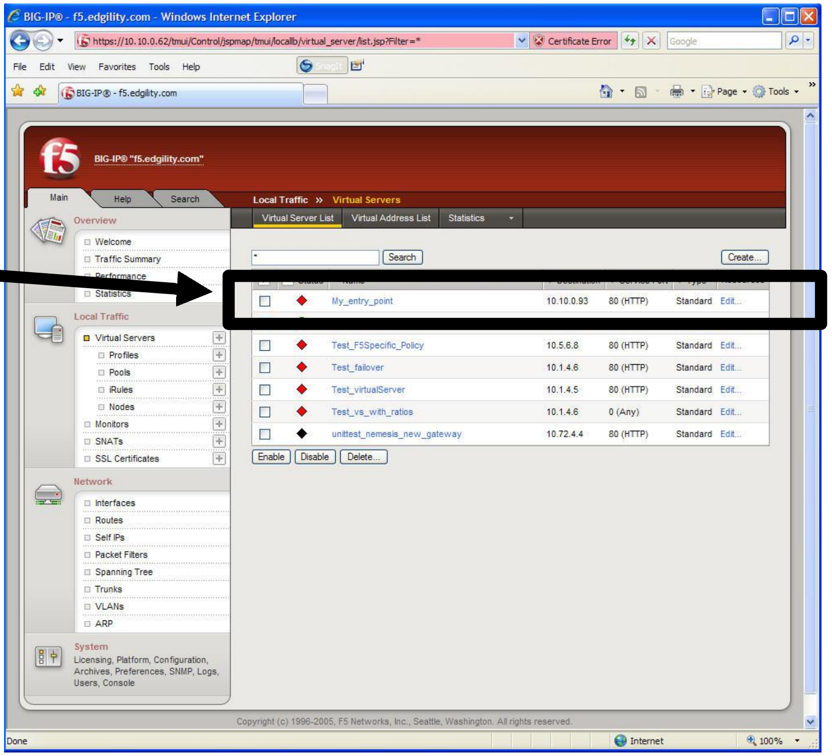


- Regulates use based on user, types of requests, time of day, etc.
- Protects legacy systems from runaway SOA use

Dynamic Capacity Expansion



WS-Policy



BIG-IP® - f5.edgility.com - Windows Internet Explorer

https://10.10.0.62/tmui/Control/jspmap/tmui/locallb/virtual_server/list.jsp?Filter=*

BIG-IP® "f5.edgility.com"

Local Traffic » Virtual Servers

	Status	Name	Destination	Service Port	Type	Resources
☐	◆	My_entry_point	10.10.0.93	80 (HTTP)	Standard	Edit...
☐	◆	Test_F5Specific_Policy	10.5.6.8	80 (HTTP)	Standard	Edit...
☐	◆	Test_failover	10.1.4.6	80 (HTTP)	Standard	Edit...
☐	◆	Test_virtualServer	10.1.4.5	80 (HTTP)	Standard	Edit...
☐	◆	Test_vs_with_ratios	10.1.4.6	0 (Any)	Standard	Edit...
☐	◆	unittest_nemesis_new_gateway	10.72.4.4	80 (HTTP)	Standard	Edit...

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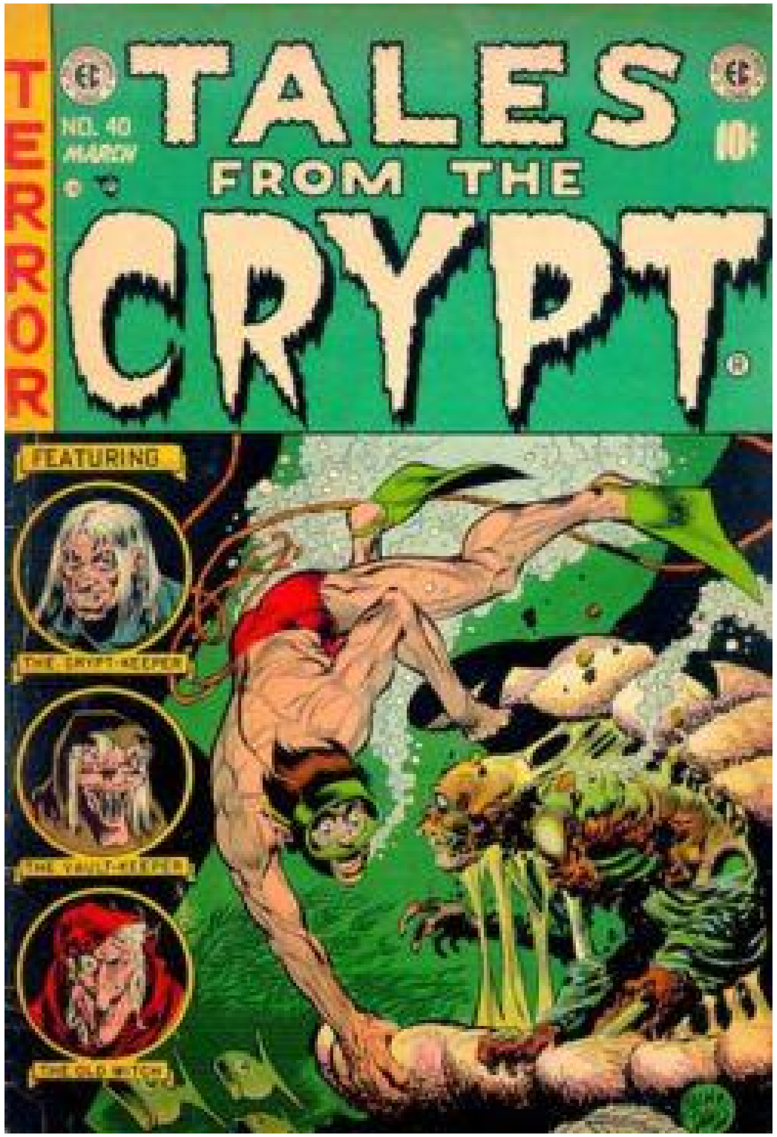
F5 iRules

- Add Additional Service Replicates based upon SLA Thresholds
- WS-Policy routing / failover / load balancing policies to Hardware Products like F5, Cisco, others or Software ESBs like Microsoft BizTalk, others

ESM Summary

- ESM provides Traditional Measuring and Monitoring as you would expect
- But it also provides a number of “Non-Traditional” capabilities such as
  - Visualization
  - Synchronization with Registries
  - Root Cause Analysis and Distributed Debugging
  - Validation – Simulation for testing Shared Components in Isolation
  - Security
  - Prioritization
  - Scalability – Dynamic Expansion or Throttling

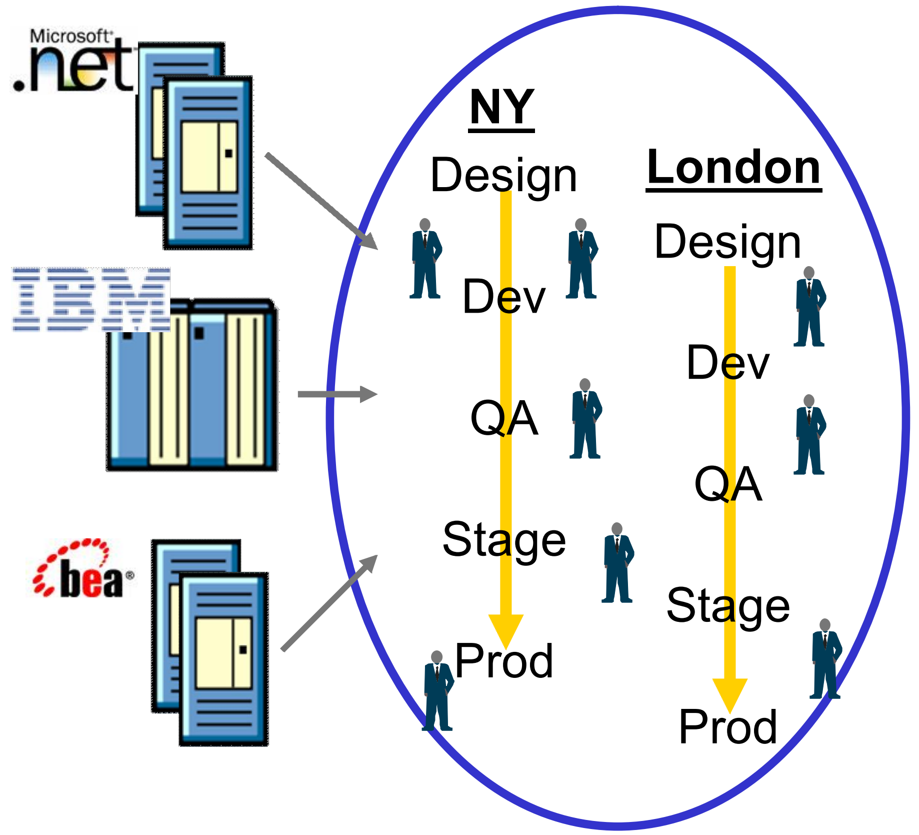
The Obligatory Hook….



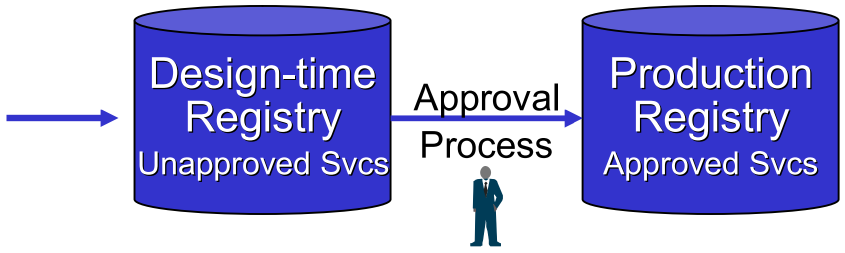
Tip #2

- Human Nature will derail your attempts to use Design-time Governance (UDDI Registries, etc.)

Lehman Brothers
Making enterprise-wide SOA governance pain free



- 3,000 Developers
  - Different departments / divisions
  - Different priorities and "fire drills"
  - Different locations

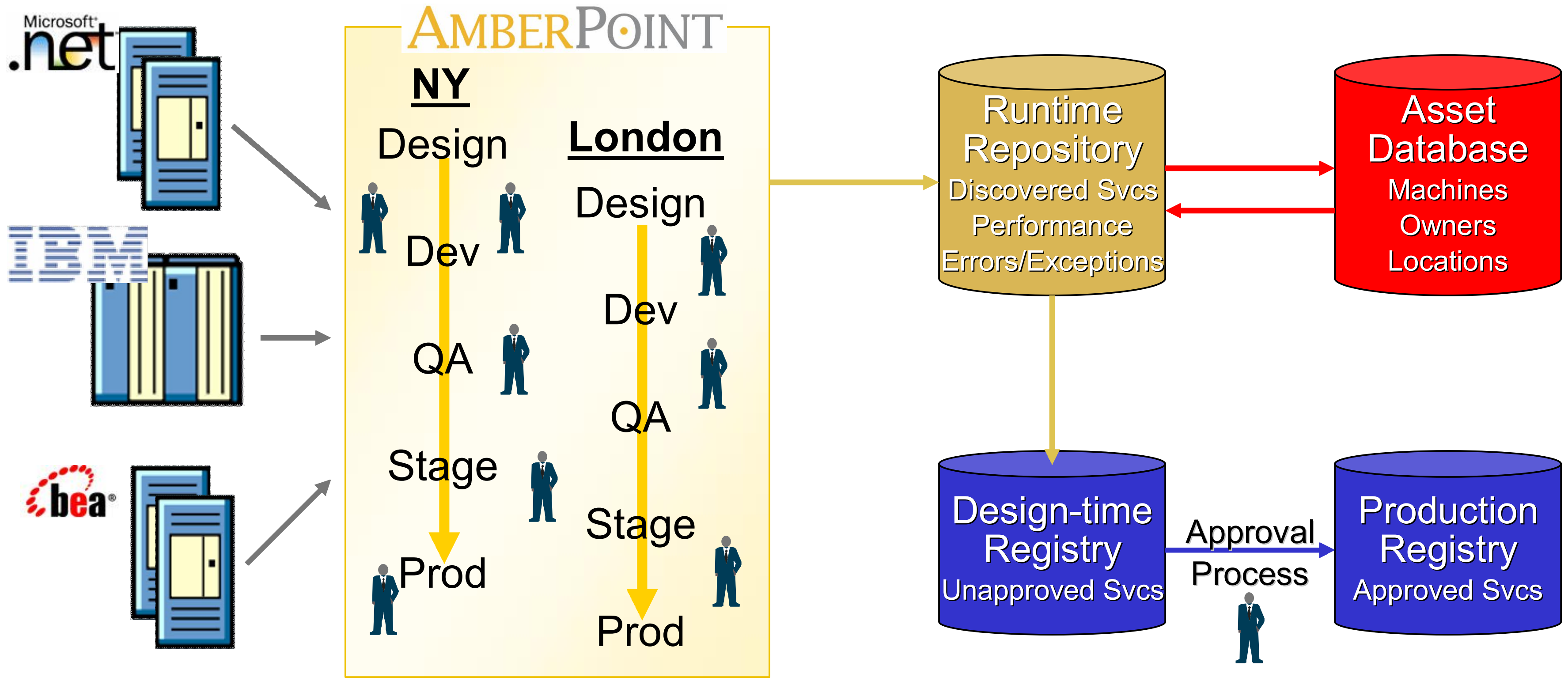


- After a year, only 8 registered services
  - Too busy to update the registry
  - No value to the developers

Tip #2

- Human Nature will derail your attempts to use Design-time Governance (UDDI Registries, etc.) but creative use of ESM can Solve this Issue

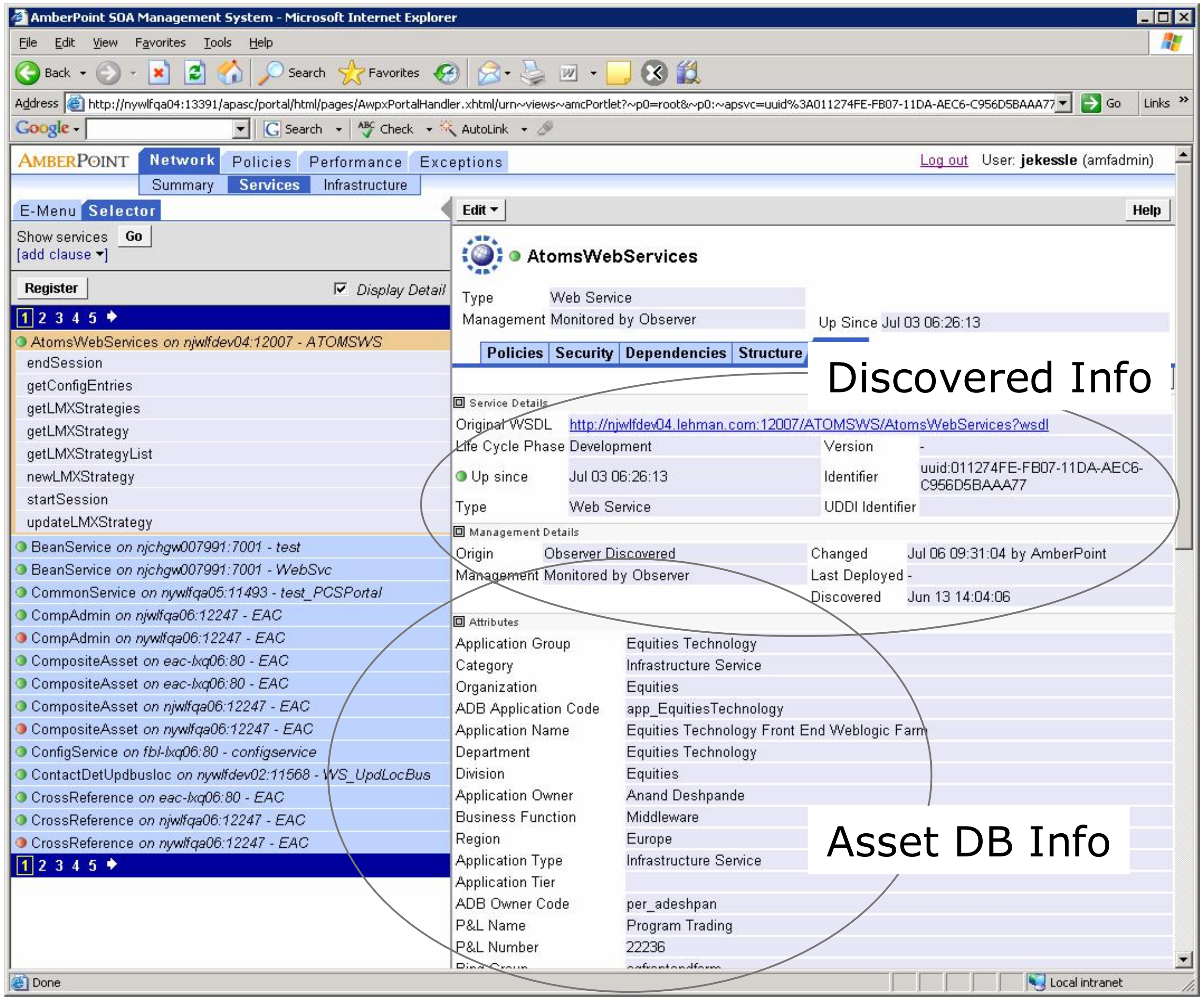
Using Automatic Runtime Governance to Achieve Design-time Governance



- Uses AmberPoint's automatic discovery of running services and dependencies at each stage of their SOA lifecycle
  - Synchronizes with home-grown Asset DB and Design-time Repository

Service Detail Screen

- When service was discovered
- How long service has been up
- Type of service
- Link to WSDL
- Metadata from Asset DB (42 fields)
- All data can be used in policy definitions


AmberPoint SOA Management System - Microsoft Internet Explorer

Address http://nywlfqa04:13391/apasc/portal/html/pages/AwpxPortalHandler.xhtml/urn~views~amcPortlet?~p0=root&~p0:~apsvc=uuid%3A011274FE-FB07-11DA-AEC6-C956D5BAAA77

File Edit View Favorites Tools Help
Back Search Favorites Go Links
Google Search Check AutoLink
AMBERPOINT Network Policies Performance Exceptions
Log out User: jekessle (amfadmin)
Summary Services Infrastructure
E-Menu Selector
Show services Go [add clause]
Register Display Detail
Edit Help
1 2 3 4 5

AtomsWebServices *on njwlfdev04:12007 - ATOMSWS*
- endSession
- getConfigEntries
- getLMXStrategies
- getLMXStrategy
- getLMXStrategyList
- newLMXStrategy
- startSession
- updateLMXStrategy

BeanService *on njchgw007991:7001 - test*
BeanService *on njchgw007991:7001 - WebSvc*
CommonService *on nywlfqa05:11493 - test_PCSPortal*
CompAdmin *on njwlfqa06:12247 - EAC*
CompAdmin *on nywlfqa06:12247 - EAC*
CompositeAsset *on eac-lxq06:80 - EAC*
CompositeAsset *on eac-lxq06:80 - EAC*
CompositeAsset *on njwlfqa06:12247 - EAC*
CompositeAsset *on nywlfqa06:12247 - EAC*
ConfigService *on fbl-lxq06:80 - configservice*
ContactDetUpdbusloc *on nywlfdev02:11568 - WS_UpdLocBus*
CrossReference *on eac-lxq06:80 - EAC*
CrossReference *on njwlfqa06:12247 - EAC*
CrossReference *on nywlfqa06:12247 - EAC*

AtomsWebServices

Type	Web Service
Management	Monitored by Observer
Up Since	Jul 03 06:26:13

Service Details

Original WSDL	http://njwlfdev04.lehman.com:12007/ATOMSWS/AtomsWebServices?wsdl		
Life Cycle Phase	Development	Version	-
Up since	Jul 03 06:26:13	Identifier	uuid:011274FE-FB07-11DA-AEC6-C956D5BAAA77
Type	Web Service	UDDI Identifier	

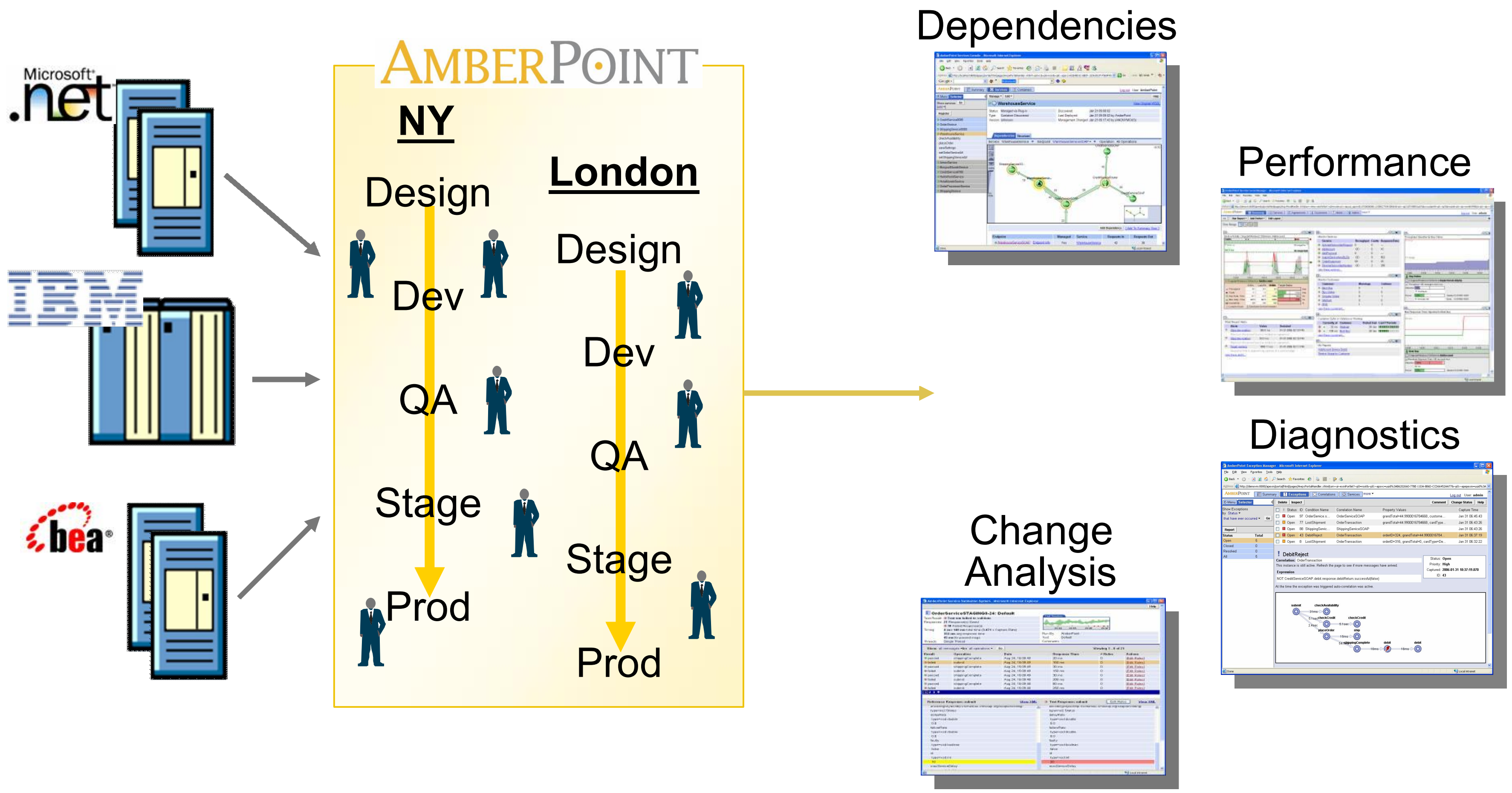
Management Details

Origin	Observer Discovered	Changed	Jul 06 09:31:04 by AmberPoint
Management	Monitored by Observer	Last Deployed	-
		Discovered	Jun 13 14:04:06

Attributes

Application Group	Equities Technology
Category	Infrastructure Service
Organization	Equities
ADB Application Code	app_EquitiesTechnology
Application Name	Equities Technology Front End Weblogic Farm
Department	Equities Technology
Division	Equities
Application Owner	Anand Deshpande
Business Function	Middleware
Region	Europe
Application Type	Infrastructure Service
Application Tier	
ADB Owner Code	per_adeshpan
P&L Name	Program Trading
P&L Number	22236

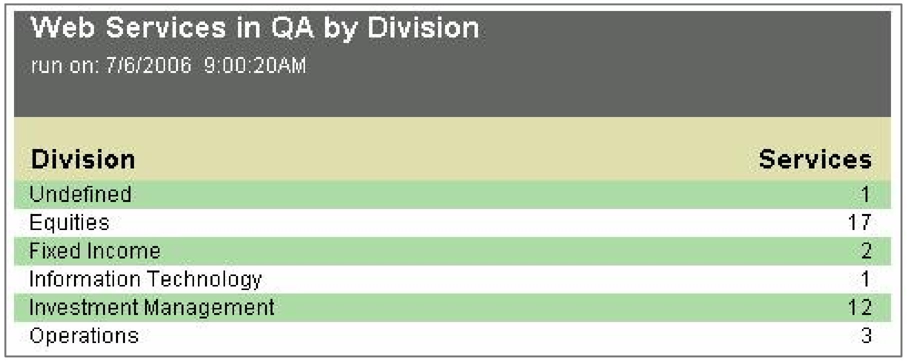
"What's in it for me?" A lot.
Comprehensive insight without lifting a finger



- Opt-in for expanded control
  - Security, load balancing, failover, etc.

Results: Visibility and Cooperation

- From only 8 registered services after previous approach to 600 registered services in first couple months
- ROI reporting visible throughout the company



Web Services in QA by Division
run on: 7/6/2006 9:00:20AM

Division	Services
Undefined	1
Equities	17
Fixed Income	2
Information Technology	1
Investment Management	12
Operations	3

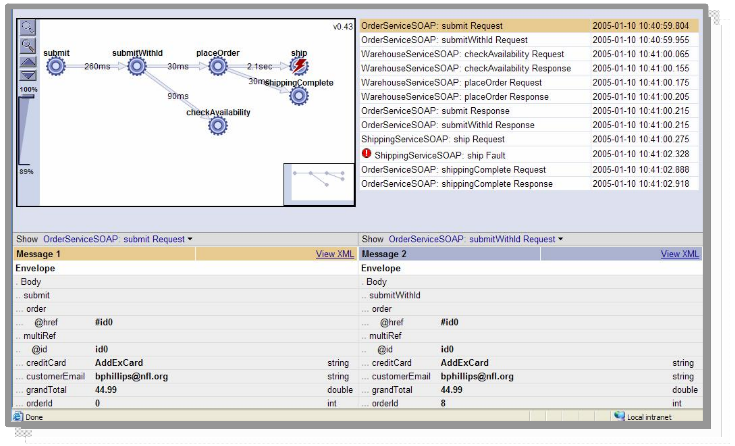
- Runtime results automatically feed other consoles
  - JMX-based home grown system
  - Internal SOA coordination site
  - HP OpenView
- <u>Transformed the environment to one where groups were vying to be the ones that could “cooperate the most”</u>

Tip #3

- Things will Break Differently and you won’t be able to fix them the way you have been fixing them in the past

Large Telecommunications Company

- Complex Order Management Process
- 65 – 100 Different Steps
- 100% Failure – Every Single Order Bombed at Some Point in the Process
- Team of 40 (expensive) Full Time Consultants
  - Digging through Logs
  - Deciphering Problems
  - Manual Resolution
- Solution - Exception Management
  - Correlate Messages into Transactions and Flows
  - Automated Alerts when Process Halts
  - All Related Messages sent to Consultant
  - Automate Resolution as Patterns Determined



OrderServiceSOAP: submit Request	2005-01-10 10:40:59.804
OrderServiceSOAP: submitWithId Request	2005-01-10 10:40:59.955
WarehouseServiceSOAP: checkAvailability Request	2005-01-10 10:41:00.065
WarehouseServiceSOAP: checkAvailability Response	2005-01-10 10:41:00.155
WarehouseServiceSOAP: placeOrder Request	2005-01-10 10:41:00.175
WarehouseServiceSOAP: placeOrder Response	2005-01-10 10:41:00.205
OrderServiceSOAP: submit Response	2005-01-10 10:41:00.215
OrderServiceSOAP: submitWithId Response	2005-01-10 10:41:00.215
ShippingServiceSOAP: ship Request	2005-01-10 10:41:00.275
❗ ShippingServiceSOAP: ship Fault	2005-01-10 10:41:02.328
OrderServiceSOAP: shippingComplete Request	2005-01-10 10:41:02.888
OrderServiceSOAP: shippingComplete Response	2005-01-10 10:41:02.918

Show OrderServiceSOAP: submit Request

Message 1		View XML
Envelope		
. Body		
.. submit		
... order		
... @href	#id0	
.. multiRef		
.. @id	id0	
... creditCard	AddExCard	string
... customerEmail	bphillips@nfl.org	string
... grandTotal	44.99	double
... orderId	0	int

Show OrderServiceSOAP: submitWithId Request

Message 2		View XML
Envelope		
. Body		
.. submitWithId		
... order		
... @href	#id0	
.. multiRef		
.. @id	id0	
... creditCard	AddExCard	string
... customerEmail	bphillips@nfl.org	string
... grandTotal	44.99	double
... orderId	8	int

Done Local intranet

Zurich Insurance

- Complex, Composite Services built with Standard Development Tools and Debuggers
- Services all worked in Isolation
- When Integrated as a System, however, problems emerged
  - Some Responses Slow
  - Some Responses never Returned
  - No Pattern to Problem
  - Development team spent 3 Weeks trying to find Source
- Development Team Monitored using Exception Management Capability of ESM
  - Automatically Detected Problematic Service within Minutes
- Determined Java Thread Lock Issue that only occurred under Load after a certain amount of Time had passed

Aegis Mortgage

- Microsoft Sharepoint Portal as a front end to Loan Processing System comprised of multiple packaged applications.
  - System Accounts for $1.2 Billion Annually in loans
- Everything worked fine in Development and QA/Test, but Problems in Production
  - Customers would File Loan Applications but get no Responses
  - Aegis did not know about it unless the customers called them
- Potential lost revenue estimated at $20 – 25 Million per Year
- Used ESM to Debug System While In Production
  - “Proof of Concept” at 11 PM on a Friday Night
  - Found System Timeouts, Database Driver Problems within first hour
- Paraphrased Quote from the System Architect:

  “We … can see all the (Web Service) calls and their XML payloads for a given user's action. This is HUGE for problem resolution from the HelpDesk all the way to the Developer”.

Tip #4

- You can Now do things that you could Never Do Before, especially with Security and Mining Data in Real Time

Bank Leumi - Israel

Financial Services

Largest Bank in Israel with $500B assets.

Security infrastructure for Back-office access

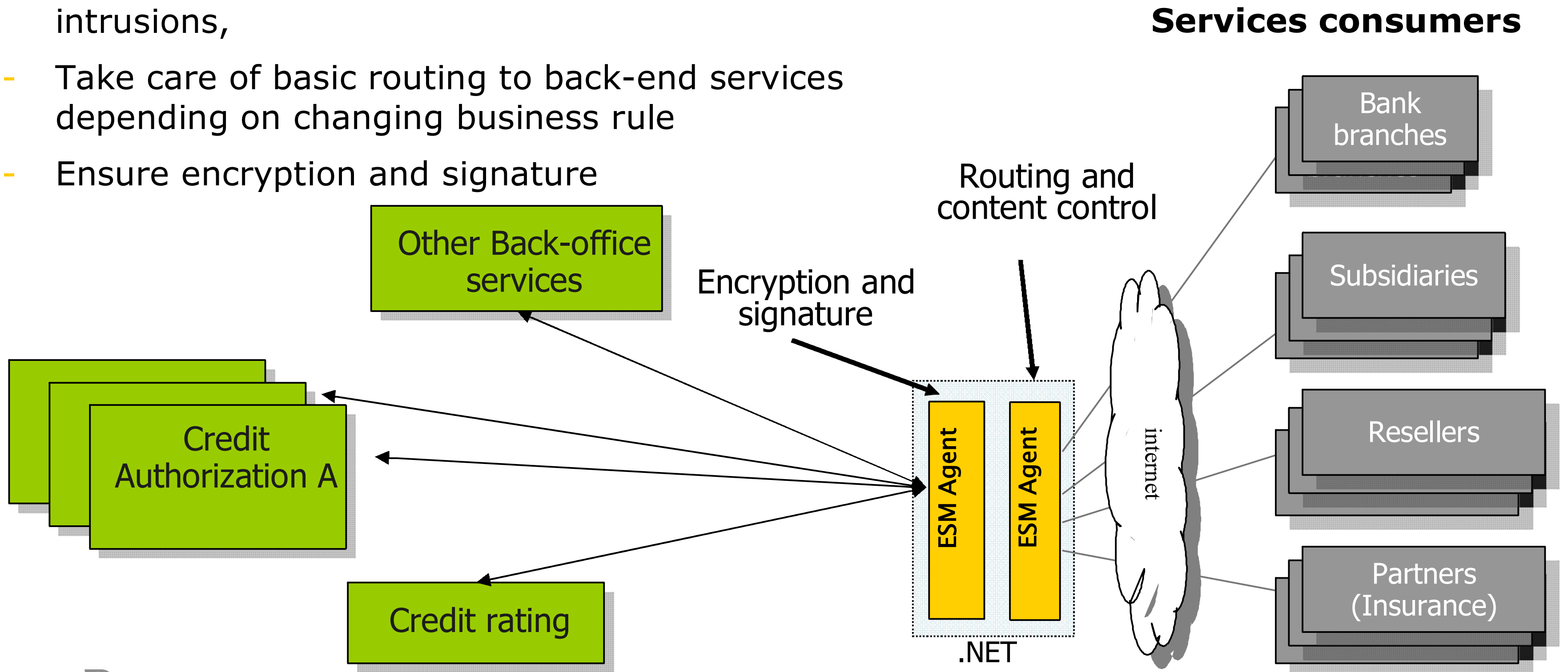
Credit rating and credit authorization offered to internal and external applications through Web services.

Security layer objectives:

- Control messages content to detect possible intrusions,
- Take care of basic routing to back-end services depending on changing business rule
- Ensure encryption and signature

ESM met key requirements

- Message content control
- Content dependant encryption
- Routing depending on content and context
- Real-time dashboards



AMBERPOINT

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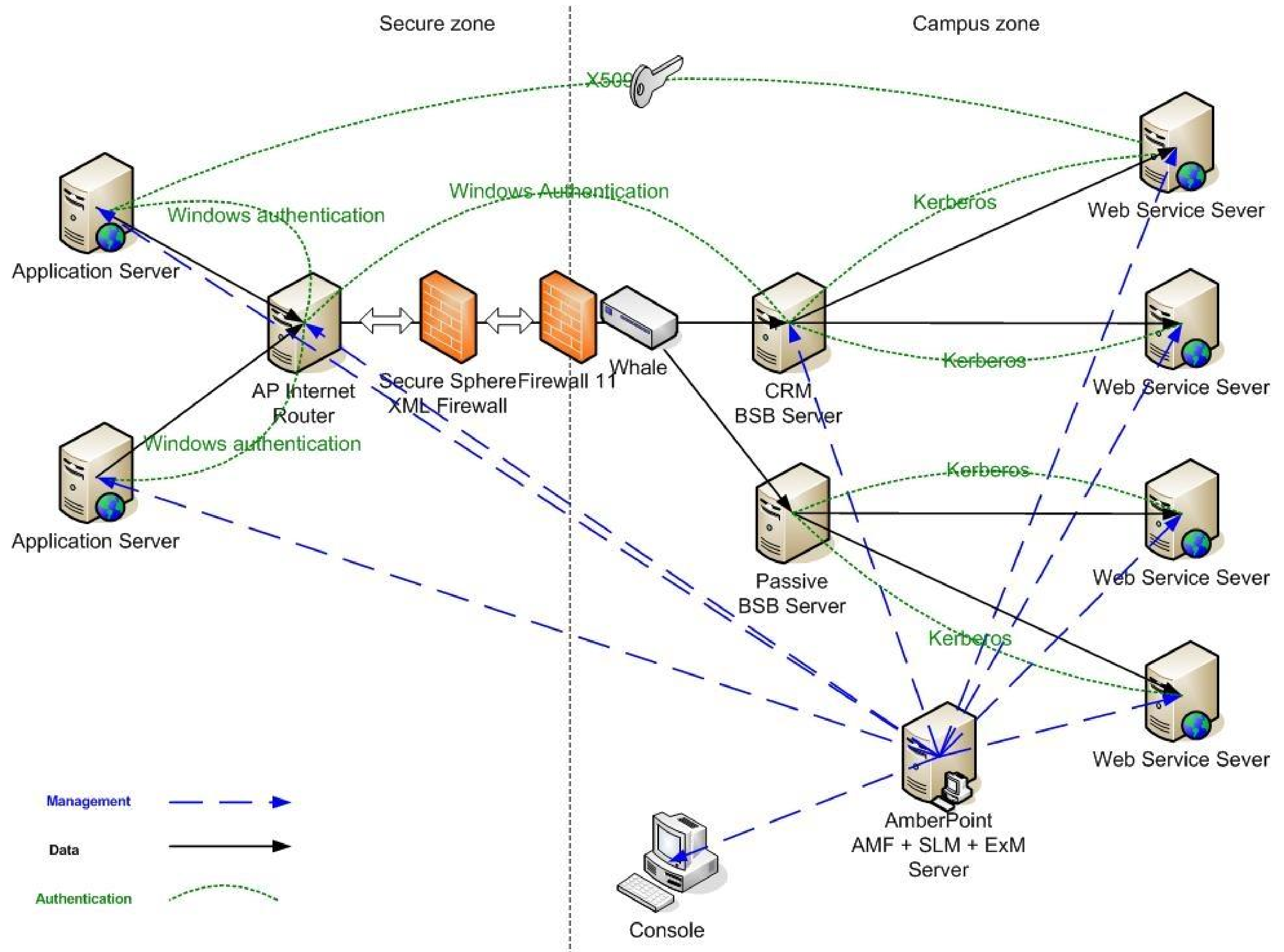
Bank Leumi Security Gateway



Content Guard Security Pattern

- Ability to Activate Policies for Short Durations
- Leverage WS-Policy Security Policies
  - Authorization
  - Authentication
- Allow Temporary Access to Systems and Services for Important, Irregular Situations
  - Coalition Partners
  - Other Branches of the Service (if you absolutely HAVE to ☺)

Orange
Meeting large scale requirements

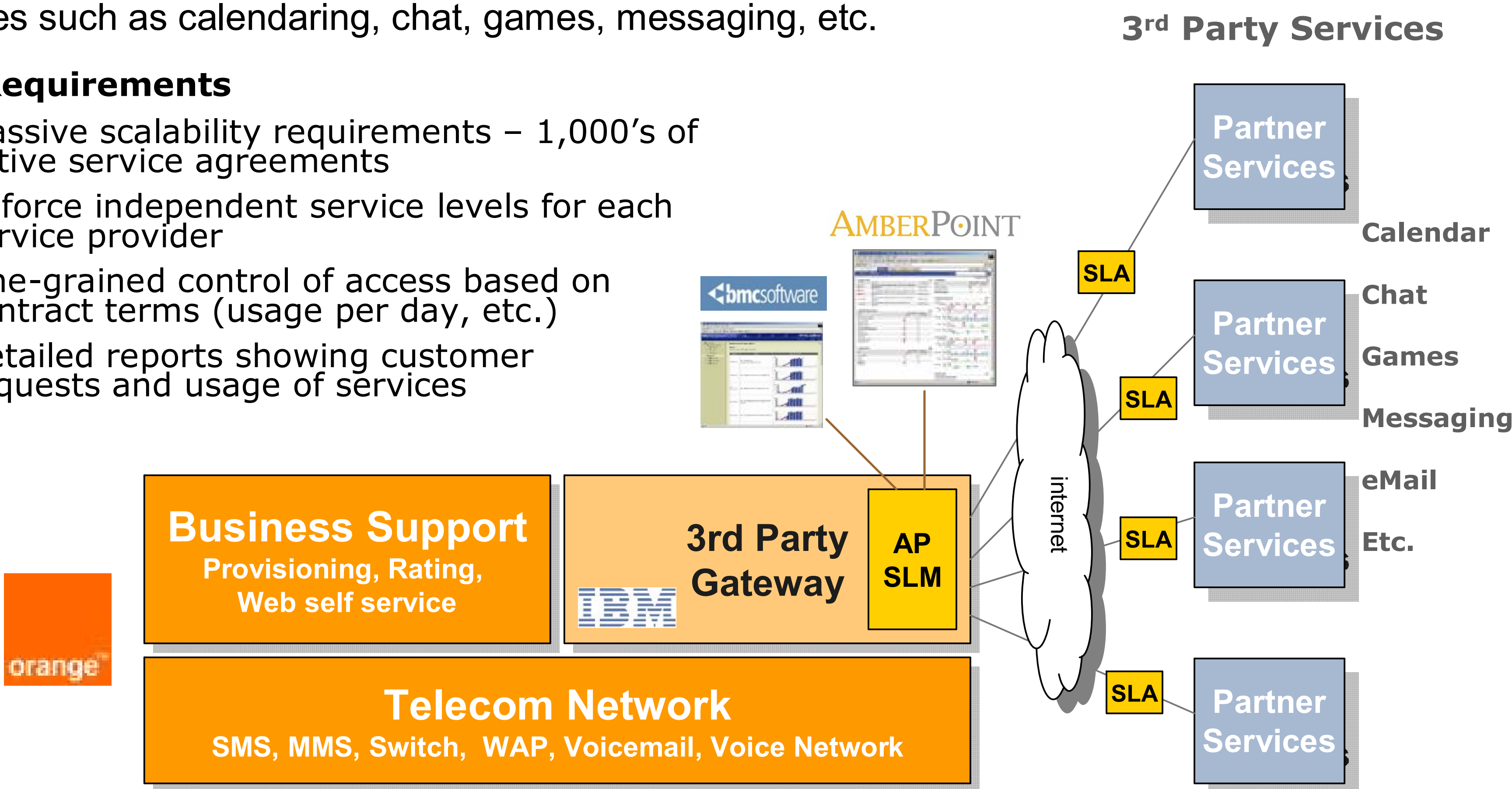
Telecommunications

Use of Service-oriented Applications

2nd largest European mobile provider (20€ B) that is moving to Web services as the standard interface for external mobile services such as calendaring, chat, games, messaging, etc.

Key Requirements

- Massive scalability requirements – 1,000's of active service agreements
- Enforce independent service levels for each service provider
- Fine-grained control of access based on contract terms (usage per day, etc.)
- Detailed reports showing customer requests and usage of services



H & R Block Financial Services
Intelligent Real-Time Data Mining

Financial Services

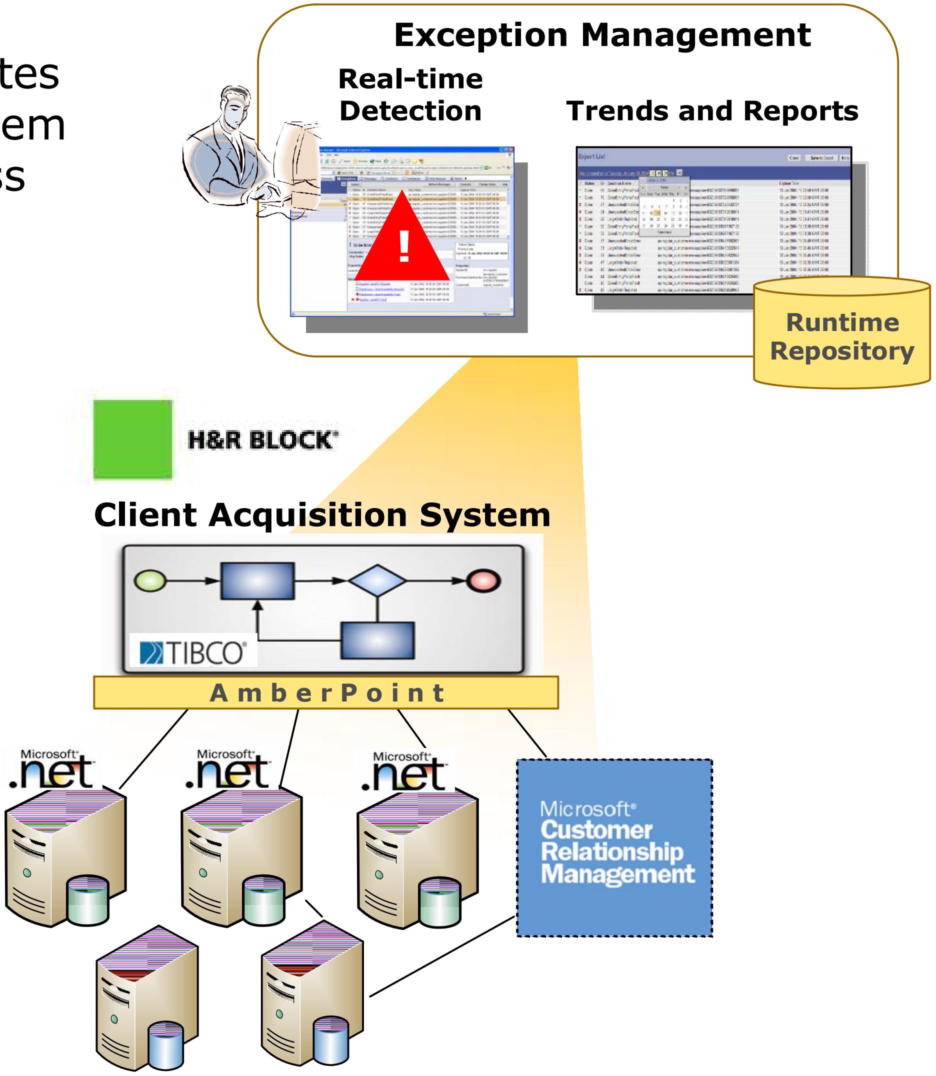
Client Acquisition System (CAS) aggregates leads from different systems, qualifies them and routes to branches based on business criteria.

Key Requirements

- Managed high-throughput environment – up to 5,000,000 msgs per day
- Captured and centrally logged process instance from end-to-end for debugging
- Eliminated need for developers to code custom error handling logic – services concentrate on business problem
- Used to handle business- and operations-level exceptions

Results

- Allowed reduction of support staff from 10 down to 3
- Allowed architect to mandate uniform error-handling guidelines
- 20% reduction in development costs



Summary – Collective Wisdom

- If you use Traditional Management Tools and Techniques alone, you will fail because Traditional Management is an Operations Problem and SOA Management is an Application Problem

  As a Result, the SOA Management System will be Monitored by your Operations Staff but Used by your Development and Tier II/Tier III Staffs to solve problems that they would otherwise have to write complex code to fix.

- Human Nature will derail your attempts to use Design-time Governance (UDDI Registries, etc.) but creative use of ESM can Solve this Issue

- Things will Break Differently and you won’t be able to fix them the way you have been fixing them in the past

- You can Now do things that you could Never Do Before, especially with Security and Mining Data in Real Time

Did I Accomplish My Objective?

- Provide you with a few Tips, based upon Real World Experience, that will help you to be successful with Net Centric Computing (SOA)